

JEFFERSON MATH PROJECT

REGENTS BY TOPIC

NY Integrated Algebra Regents Exam Questions
from Fall 2007 to August 2011 Sorted by Topic
(Answer Key)

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Dear Sir

I have to acknowledge the receipt of your favor of May 14. in which you mention that you have finished the 6. first books of Euclid, plane trigonometry, surveying & algebra and ask whether I think a further pursuit of that branch of science would be useful to you. there are some propositions in the latter books of Euclid, & some of Archimedes, which are useful, & I have no doubt you have been made acquainted with them. trigonometry, so far as this, is most valuable to every man, there is scarcely a day in which he will not resort to it for some of the purposes of common life. the science of calculation also is indispensable as far as the extraction of the square & cube roots; Algebra as far as the quadratic equation & the use of logarithms are often of value in ordinary cases: but all beyond these is but a luxury; a delicious luxury indeed; but not to be indulged in by one who is to have a profession to follow for his subsistence. in this light I view the conic sections, curves of the higher orders, perhaps even spherical trigonometry, Algebraical operations beyond the 2d dimension, and fluxions.

Letter from Thomas Jefferson to William G. Munford, Monticello, June 18, 1799.

Integrated Algebra Regents Exam Questions by Performance Indicator: Topic Answer Section

1 ANS: 1

$$-3(-4)^2(2) + 4(-4) = -96 - 16 = -112$$

PTS: 2 REF: 081113ia STA: A.N.6 TOP: Evaluating Expressions

2 ANS: 2

PTS: 2
TOP: Evaluating Expressions

REF: 011110ia

STA: A.N.6

3 ANS: 3

$$|-5(5) + 12| = |-13| = 13$$

PTS: 2 REF: 080923ia STA: A.N.6 TOP: Evaluating Expressions

4 ANS: 1

$$-|a - b| = -|7 - (-3)| = -|-10| = -10$$

PTS: 2 REF: 011010ia STA: A.N.6 TOP: Evaluating Expressions

5 ANS: 3

PTS: 2
TOP: Identifying Properties

REF: fall0705ia

STA: A.N.1

6 ANS: 2

PTS: 2
TOP: Identifying Properties

REF: 080802ia

STA: A.N.1

7 ANS:

(1) Distributive; (2) Commutative

PTS: 2 REF: 061132ia STA: A.N.1 TOP: Identifying Properties

8 ANS: 3

PTS: 2
TOP: Properties of Reals

REF: 060926ia

STA: A.N.1

9 ANS: 4

PTS: 2
TOP: Properties of Reals

REF: 011114ia

STA: A.N.1

10 ANS:

$-6a + 42$. distributive

PTS: 2 REF: 061032ia STA: A.N.1 TOP: Properties of Reals

11 ANS: 4

PTS: 2
TOP: Set Theory

REF: fall0704ia

STA: A.A.29

12 ANS: 1

PTS: 2
TOP: Set Theory

REF: 061021ia

STA: A.A.29

13 ANS: 2

PTS: 2
TOP: Set Theory

REF: 011119ia

STA: A.A.29

14 ANS: 3

PTS: 2
TOP: Set Theory

REF: 081117ia

STA: A.A.29

15 ANS: 3

PTS: 2
TOP: Set Theory

REF: 010917ia

STA: A.A.29

16 ANS: 4

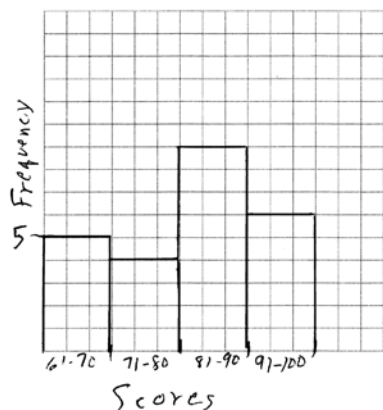
PTS: 2
TOP: Set Theory

REF: 060930ia

STA: A.A.29

- 17 ANS: 4 PTS: 2 REF: 081022ia STA: A.A.29
TOP: Set Theory
- 18 ANS: 2 PTS: 2 REF: 061128ia STA: A.A.29
TOP: Set Theory
- 19 ANS: 4 PTS: 2 REF: 061001ia STA: A.A.30
TOP: Set Theory
- 20 ANS: 3 PTS: 2 REF: 081009ia STA: A.A.30
TOP: Set Theory
- 21 ANS: 3 PTS: 2 REF: 081103ia STA: A.A.30
TOP: Set Theory
- 22 ANS: 4
 $A = \{2, 4, 6, 8, 10, 12, 14, 16, 18, 20\}$
- PTS: 2 REF: 080912ia STA: A.A.30 TOP: Set Theory
- 23 ANS: 2
The set of integers greater than -2 and less than 6 is $\{-1, 0, 1, 2, 3, 4, 5\}$. The subset of this set that is the positive factors of 5 is $\{1, 5\}$. The complement of this subset is $\{-1, 0, 2, 3, 4\}$.
- PTS: 2 REF: 060818ia STA: A.A.30 TOP: Set Theory
- 24 ANS:
 $\{1, 2, 4, 5, 9, 10, 12\}$
- PTS: 2 REF: 080833ia STA: A.A.30 TOP: Set Theory
- 25 ANS: 2 PTS: 2 REF: 081003ia STA: A.A.31
TOP: Set Theory
- 26 ANS: 3 PTS: 2 REF: fall0710ia STA: A.A.31
TOP: Set Theory
- 27 ANS: 1 PTS: 2 REF: 011101ia STA: A.A.31
TOP: Set Theory
- 28 ANS: 1 PTS: 2 REF: 011004ia STA: A.A.31
TOP: Set Theory
- 29 ANS:
 $0 \leq t \leq 40$
- PTS: 2 REF: 060833ia STA: A.A.31 TOP: Set Theory
- 30 ANS: 4 PTS: 2 REF: 061123ia STA: A.A.31
TOP: Set Theory

31 ANS:



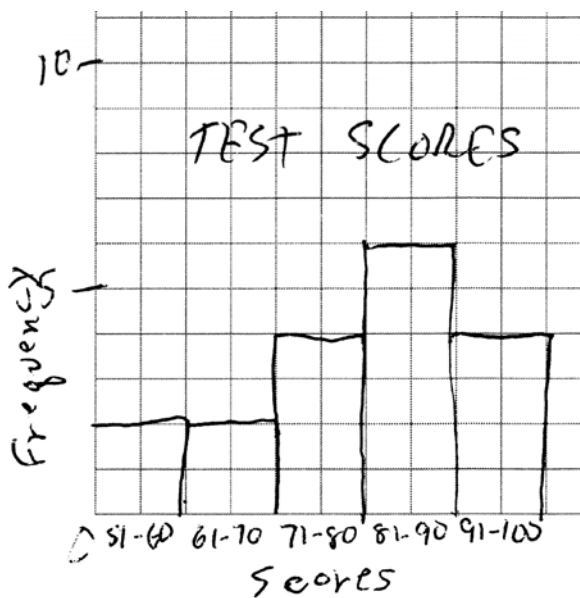
PTS: 2 REF: 081132ia STA: A.S.5

TOP: Frequency Histograms, Bar Graphs and Tables

KEY: frequency histograms

32 ANS:

Interval	Tally	Frequency
51-60		2
61-70		2
71-80		4
81-90		6
91-100		4

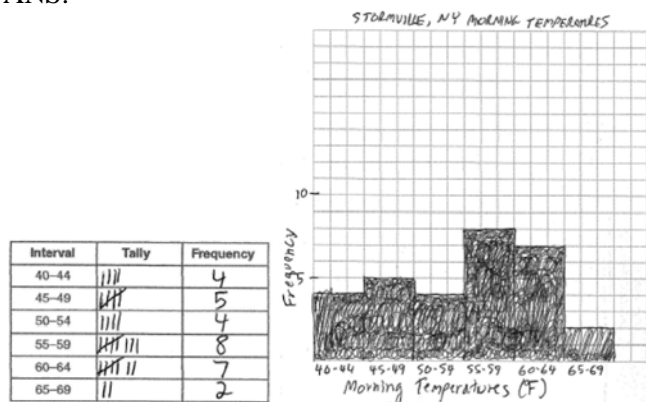


PTS: 3 REF: 011135ia STA: A.S.5

TOP: Frequency Histograms, Bar Graphs and Tables

KEY: frequency histograms

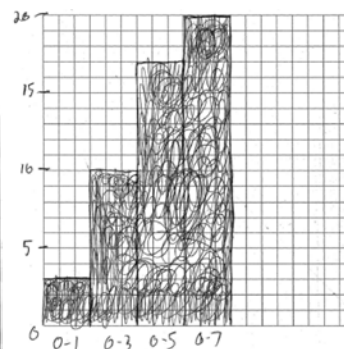
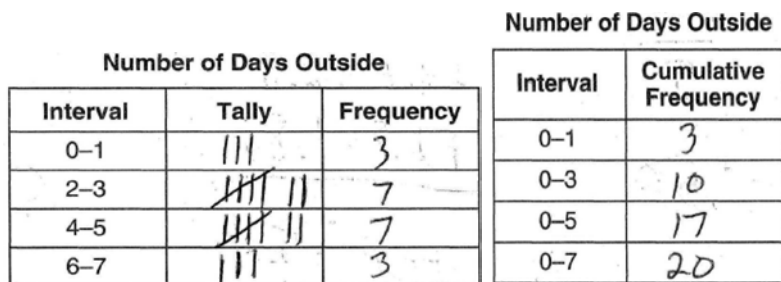
33 ANS:



PTS: 4 REF: 060938ia STA: A.S.5
 TOP: Frequency Histograms, Bar Graphs and Tables

KEY: frequency histograms

34 ANS:



PTS: 4 REF: 080838ia STA: A.S.5
 TOP: Frequency Histograms, Bar Graphs and Tables

KEY: cumulative frequency histograms

35 ANS: 3
 $25 - 18 = 7$

PTS: 2 REF: 060822ia STA: A.S.9
 TOP: Frequency Histograms, Bar Graphs and Tables

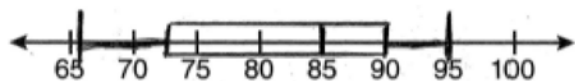
36 ANS:
 30, 20, 71-80, 81-90 and 91-100

PTS: 4 REF: 061038ia STA: A.S.9
 TOP: Frequency Histograms, Bar Graphs and Tables

37 ANS: 2
 The median score, 10, is the vertical line in the center of the box.

PTS: 2 REF: fall0709ia STA: A.S.5 TOP: Box-and-Whisker Plots

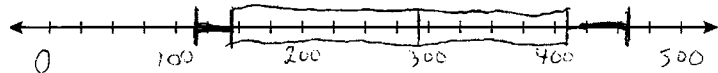
38 ANS:



PTS: 4 REF: 080939ia STA: A.S.5 TOP: Box-and-Whisker Plots

39 ANS:

minimum is 120, 1st quartile is 145, median is 292, 3rd quartile is 407, and maximum is 452



PTS: 3 REF: 081034ia STA: A.S.5 TOP: Box-and-Whisker Plots

40 ANS: 3

The value of the third quartile is the last vertical line of the box.

PTS: 2 REF: 080818ia STA: A.S.6 TOP: Box-and-Whisker Plots

41 ANS: 3

The value of the upper quartile is the last vertical line of the box.

PTS: 2 REF: 060915ia STA: A.S.6 TOP: Box-and-Whisker Plots

42 ANS: 3

$$75 - 15 = 60$$

PTS: 2 REF: 011113ia STA: A.S.6 TOP: Box-and-Whisker Plots

43 ANS: 1

PTS: 2 TOP: Box-and-Whisker Plots

REF: 011001ia

STA: A.S.6

44 ANS: 2

PTS: 2 TOP: Box-and-Whisker Plots

REF: 081106ia

STA: A.S.6

45 ANS: 4

PTS: 2 TOP: Box-and-Whisker Plots

REF: 010929ia

STA: A.S.6

46 ANS: 3

PTS: 2 TOP: Quartiles and Percentiles

REF: 061017ia

STA: A.S.11

47 ANS: 3

PTS: 2 TOP: Scatter Plots

REF: 081001ia

STA: A.S.7

48 ANS: 2

PTS: 2 TOP: Scatter Plots

REF: fall0701ia

STA: A.S.7

49 ANS: 2

PTS: 2 TOP: Scatter Plots

REF: 061115ia

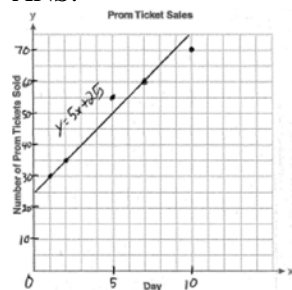
STA: A.S.7

50 ANS: 4



PTS: 2 REF: 080822ia STA: A.S.8 TOP: Scatter Plots

51 ANS:



PTS: 3 REF: 060936ia STA: A.S.8 TOP: Scatter Plots

52 ANS: 3 PTS: 2 REF: 011103ia STA: A.S.12
TOP: Scatter Plots

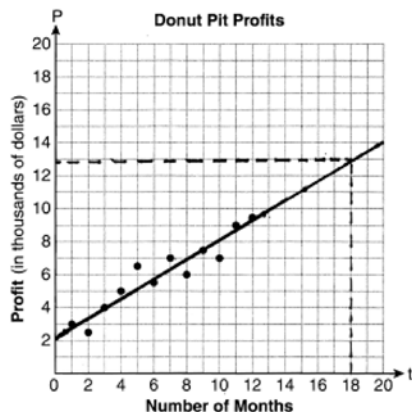
53 ANS: 4 PTS: 2 REF: 060805ia STA: A.S.12
TOP: Scatter Plots

54 ANS: 2 PTS: 2 REF: 011019ia STA: A.S.12
TOP: Scatter Plots

55 ANS: 1 PTS: 2 REF: 081102ia STA: A.S.12
TOP: Scatter Plots

56 ANS: 2 PTS: 2 REF: 080930ia STA: A.S.17
TOP: Scatter Plots

57 ANS:



They will not reach their goal in 18 months.

PTS: 3 REF: 061036ia STA: A.S.17 TOP: Scatter Plots

58 ANS: 3
mean = 6, median = 6 and mode = 7

PTS: 2 REF: 080804ia STA: A.S.4 TOP: Central Tendency

59 ANS: 3
mean = $81\frac{7}{11}$, median = 81 and mode = 76

PTS: 2 REF: 011118ia STA: A.S.4 TOP: Central Tendency

- 60 ANS: 4
The mean is $80.\bar{6}$, the median is 84.5 and the mode is 87.
- PTS: 2 REF: 010907ia STA: A.S.4 TOP: Central Tendency
- 61 ANS:
225000, 175000, the median better represents the value since it is closer to more values than the mean.
- PTS: 4 REF: fall0737ia STA: A.S.4
TOP: Frequency Histograms, Bar Graphs and Tables
- 62 ANS:
315,000, 180,000, the median better represents value since it is closer to more prices than the mean.
- PTS: 4 REF: 060839ia STA: A.S.4
TOP: Frequency Histograms, Bar Graphs and Tables
- 63 ANS:
81.3, 80, both increase
- PTS: 3 REF: 011035ia STA: A.S.16 TOP: Central Tendency
- 64 ANS:
12, 7. Both the median and the mode will increase.
- PTS: 3 REF: 061134ia STA: A.S.16 TOP: Central Tendency
- 65 ANS: 4
$$\frac{2+3+0+1+3+2+4+0+2+3}{10} = \frac{20}{10} = 2 \quad \frac{x}{10} = 2+0.5$$
$$x = 25$$
- PTS: 2 REF: 081020ia STA: A.S.16 TOP: Average Known with Missing Data
- 66 ANS: 3
The other situations are quantitative.
- PTS: 2 REF: 060819ia STA: A.S.1 TOP: Analysis of Data
- 67 ANS: 3
The other situations are quantitative.
- PTS: 2 REF: 060905ia STA: A.S.1 TOP: Analysis of Data
- 68 ANS: 4
The other situations are quantitative.
- PTS: 2 REF: 081122ia STA: A.S.1 TOP: Analysis of Data
- 69 ANS: 4 PTS: 2 REF: 011116ia STA: A.S.1
TOP: Analysis of Data
- 70 ANS: 2
The two values are shoe size and height.
- PTS: 2 REF: fall0714ia STA: A.S.2 TOP: Analysis of Data

- 71 ANS: 3
Frequency is not a variable.
- PTS: 2 REF: 011014ia STA: A.S.2 TOP: Analysis of Data
- 72 ANS: 3 PTS: 2 REF: 061011ia STA: A.S.2
TOP: Analysis of Data
- 73 ANS: 1
To determine student interest, survey the widest range of students.
- PTS: 2 REF: 060803ia STA: A.S.3 TOP: Analysis of Data
- 74 ANS: 1
Asking school district employees about a school board candidate produces the most bias.
- PTS: 2 REF: 061107ia STA: A.S.3 TOP: Analysis of Data
- 75 ANS: 1
Everyone eats, can shop in malls and wear clothes. People who work in a sporting goods store probably watch more sports television than most.
- PTS: 2 REF: 010923ia STA: A.S.3 TOP: Analysis of Data
- 76 ANS: 4
Surveying persons leaving a football game about a sports budget contains the most bias.
- PTS: 2 REF: 080910ia STA: A.S.3 TOP: Analysis of Data
- 77 ANS: 4 PTS: 2 REF: 061022ia STA: A.S.3
TOP: Analysis of Data
- 78 ANS: 3
The number of correct answers on a test causes the test score.
- PTS: 2 REF: 080908ia STA: A.S.13 TOP: Analysis of Data
- 79 ANS: 1
A rooster crows before sunrise, not because of the sun.
- PTS: 2 REF: fall0707ia STA: A.S.14 TOP: Analysis of Data
- 80 ANS: 3
The age of a child does not cause the number of siblings he has, or vice versa.
- PTS: 2 REF: 011030ia STA: A.S.14 TOP: Analysis of Data
- 81 ANS: 2 PTS: 2 REF: 081104ia STA: A.S.14
TOP: Analysis of Data
- 82 ANS: 3 PTS: 2 REF: 081017a STA: A.S.14
TOP: Analysis of Data
- 83 ANS: 2 PTS: 2 REF: 061122ia STA: A.S.14
TOP: Analysis of Data
- 84 ANS: 1 PTS: 2 REF: fall0723ia STA: A.M.3
TOP: Error KEY: area

85 ANS: 2

$$\left| \frac{55.42 - 50.27}{55.42} \right| \approx 0.093$$

PTS: 2 REF: 081023ia STA: A.M.3 TOP: Error
KEY: area

86 ANS: 2

$$\left| \frac{13.5 - 12.8}{13.5} \right| \approx 0.093$$

PTS: 2 REF: 081123ia STA: A.M.3 TOP: Error
KEY: area

87 ANS: 2

$$\left| \frac{149.6 - 174.2}{149.6} \right| \approx 0.1644$$

PTS: 2 REF: 080926ia STA: A.M.3 TOP: Error
KEY: area

88 ANS: 3

$$\frac{(12.3 \times 11.9) - (12.2 \times 11.8)}{12.3 \times 11.9} \approx 0.0165$$

PTS: 2 REF: 061120ia STA: A.M.3 TOP: Error
KEY: area

89 ANS:

618.45, 613.44, 0.008. $21.7 \times 28.5 = 618.45$. $21.6 \times 28.4 = 613.44$. $\left| \frac{618.45 - 613.44}{613.44} \right| \approx 0.008$. An error of less than 1% would seem to be insignificant.

PTS: 4 REF: 060838ia STA: A.M.3 TOP: Error
KEY: area

90 ANS:

1,512, 1,551.25, 0.025. $36 \times 42 = 1512$. $36.5 \times 42.5 = 1551.25$. $RE = \left| \frac{1512 - 1551.25}{1551.25} \right| \approx 0.025$.

PTS: 3 REF: 010934ia STA: A.M.3 TOP: Error
KEY: area

91 ANS: 1

$$\left| \frac{289 - 282}{289} \right| \approx 0.024$$

PTS: 2 REF: 080828ia STA: A.M.3 TOP: Error
KEY: volume and surface area

92 ANS: 2

The volume of the cube using Ezra's measurements is 8 (2^3). The actual volume is 9.261 (2.1^3). The relative error

$$\text{is } \left| \frac{9.261 - 8}{9.261} \right| \approx 0.14.$$

PTS: 2 REF: 060928ia STA: A.M.3 TOP: Error

KEY: volume and surface area

93 ANS:

$$0.102. \frac{(5.3 \times 8.2 \times 4.1) - (5 \times 8 \times 4)}{5.3 \times 8.2 \times 4.1} = \frac{178.16 - 160}{178.16} = 0.102$$

PTS: 3 REF: 011036ia STA: A.M.3 TOP: Error

KEY: volume and surface area

94 ANS:

$$\frac{600 - 592}{592} \approx 0.014$$

PTS: 2 REF: 061031ia STA: A.M.3 TOP: Error

KEY: volume and surface area

95 ANS:

$$0.029. \frac{[2\pi(5.1)^2 + 2\pi(5.1)(15.1)] - [2\pi(5)^2 + 2\pi(5)(15)]}{2\pi(5.1)^2 + 2\pi(5.1)(15.1)} \approx \frac{647.294 - 628.319}{647.294} \approx 0.029$$

PTS: 4 REF: 011137ia STA: A.M.3 TOP: Error

KEY: volume and surface area

96 ANS:

(T,J,F), (T,J,N), (T,K,F), (T,K,N), (T,C,F), (T,C,N), (B,J,F), (B,J,N), (B,K,F), (B,K,N), (B,C,F), (B,C,N), (S,J,F), (S,J,N), (S,K,F), (S,K,N), (S,C,F), (S,C,N). 3, 12.

PTS: 4 REF: 061138ia STA: A.S.19 TOP: Sample Space

97 ANS:

(H,F,M), (H,F,J), (H,F,S), (H,A,M), (H,A,J), (H,A,S), (C,F,M), (C,F,J), (C,F,S), (C,A,M), (C,A,J), (C,A,S), (T,F,M), (T,F,J), (T,F,S), (T,A,M), (T,A,J), (T,A,S). There are 18 different kids' meals, 12 do not include juice and 6 include chicken nuggets.

PTS: 4 REF: 010939ia STA: A.S.19 TOP: Sample Space

98 ANS:

$$(S,S), (S,K), (\mathbf{S,D}), (K,S), (K,K), (\mathbf{K,D}), (\mathbf{D,S}), (\mathbf{D,K}), (D,D), \frac{4}{9}$$

PTS: 3 REF: fall0736ia STA: A.S.19 TOP: Sample Space

99 ANS:

$$\frac{3}{8}. (H,H,H), (H,H,T), (H,T,H), (\mathbf{H,T,T}), (T,H,H), (\mathbf{T,H,T}), (\mathbf{T,T,H}), (T,T,T)$$

PTS: 2 REF: 080933ia STA: A.S.19 TOP: Sample Space

- 100 ANS: 2 PTS: 2 REF: 060908ia STA: A.S.21
TOP: Empirical Probability
- 101 ANS: 3
$$\frac{15}{15+13+12} = \frac{15}{40} = \frac{3}{8}$$
- PTS: 2 REF: 061006ia STA: A.S.21 TOP: Experimental Probability
- 102 ANS: 3
$$\frac{3+2+4+3}{20} = \frac{12}{20}$$
- PTS: 2 REF: 011129ia STA: A.S.21 TOP: Experimental Probability
- 103 ANS: 2 PTS: 2 REF: 011002ia STA: A.S.20
TOP: Theoretical Probability
- 104 ANS: 4
$$P(O) = \frac{3}{6}, P(E) = \frac{3}{6}, P(< 6) = \frac{5}{6}, P(> 4) = \frac{2}{6}$$
- PTS: 2 REF: 010903ia STA: A.S.22 TOP: Theoretical Probability
- 105 ANS: 3
$$P(O) = \frac{5}{10}, P(P) = \frac{4}{10}, P(\leq 5) = \frac{6}{10}, P(/3) = \frac{4}{10}$$
- PTS: 2 REF: 081125ia STA: A.S.22 TOP: Theoretical Probability
- 106 ANS:
orchestra: $\frac{3}{26} > \frac{4}{36}$
- PTS: 2 REF: 011033ia STA: A.S.22 TOP: Theoretical Probability
- 107 ANS:
Hat A, add 1 not green to Hat A, add 11 green to Hat B, and add none to Hat C.
- PTS: 4 REF: 081038ia STA: A.S.22 TOP: Theoretical Probability
- 108 ANS: 3 PTS: 2 REF: fall0702ia STA: A.S.23
TOP: Theoretical Probability KEY: mutually exclusive events
- 109 ANS: 2
The events are not mutually exclusive: $P(\text{prime}) = \frac{3}{6}, P(\text{even}) = \frac{3}{6}, P(\text{prime AND even}) = \frac{1}{6}$
$$P(\text{prime OR even}) = \frac{3}{6} + \frac{3}{6} - \frac{1}{6} = \frac{5}{6}$$
- PTS: 2 REF: 080830ia STA: A.S.23 TOP: Theoretical Probability
KEY: not mutually exclusive events

110 ANS: 3

$$P(S) \cdot P(M) = P(S \text{ and } M)$$

$$\frac{3}{5} \cdot P(M) = \frac{3}{10}$$

$$P(M) = \frac{1}{2}$$

PTS: 2 REF: 081024ia STA: A.S.23 TOP: Theoretical Probability
KEY: independent events

111 ANS:

$$\frac{4}{12} \times \frac{2}{11} \times \frac{1}{10} = \frac{8}{1320} \quad \frac{6}{12} \times \frac{5}{11} \times \frac{4}{10} + \frac{4}{12} \times \frac{3}{11} \times \frac{2}{10} = \frac{120}{1320} + \frac{24}{1320} = \frac{144}{1320}$$

PTS: 4 REF: 081137ia STA: A.S.23 TOP: Theoretical Probability
KEY: dependent events

112 ANS: 3 PTS: 2 REF: 080907ia STA: A.S.20
TOP: Geometric Probability

113 ANS:

$$\frac{1375}{1600} \cdot \frac{40^2 - 15^2}{40^2} = \frac{1375}{1600}$$

PTS: 2 REF: 011132ia STA: A.S.20 TOP: Geometric Probability

114 ANS: 4

$$P(G \text{ or } W) = \frac{4}{8}, P(G \text{ or } B) = \frac{3}{8}, P(Y \text{ or } B) = \frac{4}{8}, P(Y \text{ or } G) = \frac{5}{8}$$

PTS: 2 REF: 060802ia STA: A.S.22 TOP: Geometric Probability

115 ANS: 3

$$P(\text{odd}) = \frac{3}{6}, P(\text{prime}) = \frac{3}{6}, P(\text{perfect square}) = \frac{2}{6}, P(\text{even}) = \frac{3}{6}$$

PTS: 2 REF: 061104ia STA: A.S.22 TOP: Geometric Probability

116 ANS:

$$\frac{3}{8} \cdot P(s_1 < 4) \times P(s_2 = \text{back}) = \frac{3}{4} \times \frac{1}{2} = \frac{3}{8}$$

PTS: 2 REF: 080832ia STA: A.S.23 TOP: Geometric Probability

117 ANS: 1

$$\frac{1}{8} \times \frac{1}{8} = \frac{1}{64}$$

PTS: 2 REF: 010928ia STA: A.S.23 TOP: Geometric Probability

- 118 ANS:
 $\frac{1}{8}$. After the English and social studies books are taken, 8 books are left and 1 is an English book.
- PTS: 2 REF: 060933ia STA: A.S.18 TOP: Conditional Probability
- 119 ANS: 4
 $5 \times 2 \times 3 = 30$
- PTS: 2 REF: 061002ia STA: A.N.7 TOP: Multiplication Counting Principle
- 120 ANS: 3
 $(3 - 1) \times 2 \times 3 = 12$
- PTS: 2 REF: 080905ia STA: A.N.7 TOP: Conditional Probability
- 121 ANS: 3 PTS: 2 REF: 060808ia STA: A.N.8
 TOP: Permutations
- 122 ANS: 1
 ${}_4P_4 = 4 \times 3 \times 2 \times 1 = 24$
- PTS: 2 REF: 080816ia STA: A.N.8 TOP: Permutations
- 123 ANS: 4
 ${}_5P_5 = 5 \times 4 \times 3 \times 2 \times 1 = 120$
- PTS: 2 REF: 061109ia STA: A.N.8 TOP: Permutations
- 124 ANS: 4
 ${}_8P_3 = 336$
- PTS: 2 REF: 061026ia STA: A.N.8 TOP: Permutations
- 125 ANS: 3
 ${}_6P_4 = 360$
- PTS: 2 REF: 081028ia STA: A.N.8 TOP: Permutations
- 126 ANS:
 60. ${}_5P_3 = 60$
- PTS: 2 REF: 060931ia STA: A.N.8 TOP: Permutations
- 127 ANS:
 $15,600,000, 4,368,000. 10 \times 10 \times 10 \times 26 \times 25 \times 24 = 15,600,000. 10 \times 9 \times 8 \times 26 \times 25 \times 24 = 11,232,000.$
 $15,600,000 - 11,232,000 = 4,368,000.$
- PTS: 4 REF: 011037ia STA: A.N.8 TOP: Permutations
- 128 ANS: 1 PTS: 2 REF: 081110ia STA: A.A.1
 TOP: Expressions
- 129 ANS: 3 PTS: 2 REF: 011104ia STA: A.A.1
 TOP: Expressions
- 130 ANS: 2 PTS: 2 REF: 060904ia STA: A.A.1
 TOP: Expressions

131 ANS: 4
 $25(x - 3) = 25x - 75$

PTS: 2 REF: 060823ia STA: A.A.1 TOP: Expressions

132 ANS: 4
 $5(x + 4) = 5x + 20$

PTS: 2 REF: 081013ia STA: A.A.1 TOP: Expressions

133 ANS: 4
 $A = lw = (3w - 7)(w) = 3w^2 - 7w$

PTS: 2 REF: 010924ia STA: A.A.1 TOP: Expressions

134 ANS: 4 PTS: 2 REF: fall0729ia STA: A.A.2
 TOP: Expressions

135 ANS: 3 PTS: 2 REF: 061119ia STA: A.A.2
 TOP: Expressions

136 ANS: 4 PTS: 2 REF: 061016ia STA: A.A.2
 TOP: Expressions

137 ANS: 2 PTS: 2 REF: 011027ia STA: A.A.3
 TOP: Expressions

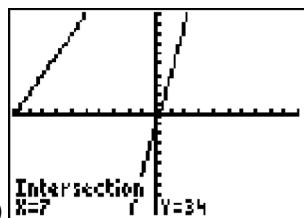
138 ANS: 1 PTS: 2 REF: 081030ia STA: A.A.3
 TOP: Expressions

139 ANS: 2 PTS: 2 REF: 061121ia STA: A.A.3
 TOP: Expressions

140 ANS:
 Not all of the homework problems are equations. The first problem is an expression.

PTS: 2 REF: 080931ia STA: A.A.3 TOP: Expressions

141 ANS: 4



$5p - 1 = 2p + 20$

$3p = 21$

$p = 7$

PTS: 2 REF: 080801ia STA: A.A.22 TOP: Solving Equations

142 ANS: 1

$$2(x - 4) = 4(2x + 1)$$

$$2x - 8 = 8x + 4$$

$$-12 = 6x$$

$$-2 = x$$

PTS: 2

REF: 011106ia

STA: A.A.22

TOP: Solving Equations

143 ANS: 2

Debbie failed to distribute the 3 properly.

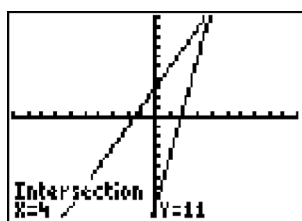
PTS: 2

REF: 011009ia

STA: A.A.22

TOP: Solving Equations

144 ANS:



4. $3 + 2g = 5g - 9$

$$12 = 3g$$

$$g = 4$$

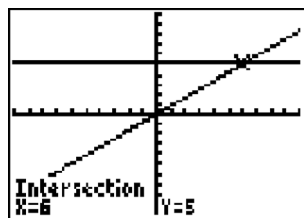
PTS: 2

REF: fall0732ia

STA: A.A.22

TOP: Solving Equations

145 ANS: 1



$$\frac{(2x \times 6) + (3 \times x)}{3 \times 6} = 5$$

$$\frac{12x + 3x}{18} = 5$$

$$15x = 90$$

$$x = 6$$

PTS: 2

REF: 060907ia

STA: A.A.25

TOP: Solving Equations with Fractional Expressions

146 ANS: 1

$$\frac{2x}{3} + \frac{1}{2} = \frac{5}{6}$$

$$\frac{2x}{3} = \frac{1}{3}$$

$$6x = 3$$

$$x = \frac{1}{2}$$

PTS: 2 REF: 011112ia STA: A.A.25

TOP: Solving Equations with Fractional Expressions

147 ANS: 2

$$\frac{3}{5}(x+2) = x-4$$

$$3(x+2) = 5(x-4)$$

$$3x+6 = 5x-20$$

$$26 = 2x$$

$$x = 13$$

PTS: 2 REF: 080909ia STA: A.A.25

TOP: Solving Equations with Fractional Expressions

148 ANS: 3

$$\frac{x}{3} + \frac{x+1}{2} = x$$

$$\frac{2x+3(x+1)}{6} = x$$

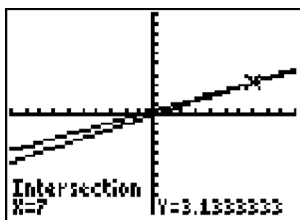
$$5x+3 = 6x$$

$$3 = x$$

PTS: 2 REF: 061019ia STA: A.A.25

TOP: Solving Equations with Fractional Expressions

149 ANS: 4



$$\frac{2x}{5} + \frac{1}{3} = \frac{7x-2}{15}$$

$$\frac{(2x \times 3) + (5 \times 1)}{5 \times 3} = \frac{7x-2}{15}$$

$$\frac{6x+5}{15} = \frac{7x-2}{15}$$

$$6x+5 = 7x-2$$

$$x = 7$$

PTS: 2 REF: 080820ia STA: A.A.25

TOP: Solving Equations with Fractional Expressions

150 ANS:

$$\frac{m}{5} + \frac{3(m-1)}{2} = 2(m-3)$$

$$\frac{2m}{10} + \frac{15(m-1)}{10} = 2m-6$$

$$\frac{17m-15}{10} = 2m-6$$

$$17m-15 = 20m-60$$

$$45 = 3m$$

$$15 = m$$

PTS: 4 REF: 081139ia STA: A.A.25

TOP: Solving Equations with Fractional Expressions

151 ANS: 2 PTS: 2 REF: 080901ia STA: A.A.4

TOP: Modeling Equations

152 ANS: 2 PTS: 2 REF: 010915ia STA: A.A.5

TOP: Modeling Equations

153 ANS: 4 PTS: 2 REF: 081011ia STA: A.A.5

TOP: Modeling Equations

154 ANS: 4

$$w(w+5) = 36$$

$$w^2 + 5w - 36 = 0$$

PTS: 2 REF: fall0726ia STA: A.A.5 TOP: Modeling Equations

155 ANS: 4

Let $x =$ youngest brother and $x + 4 =$ oldest brother. $3x - (x + 4) = 48.$

$$2x - 4 = 48$$

$$x = 26$$

PTS: 2 REF: 080928ia STA: A.A.6 TOP: Modeling Equations

156 ANS: 4 PTS: 2 REF: 011016ia STA: A.A.23

TOP: Transforming Formulas

157 ANS: 3

$$3ax + b = c$$

$$3ax = c - b$$

$$x = \frac{c - b}{3a}$$

PTS: 2 REF: 080808ia STA: A.A.23 TOP: Transforming Formulas

158 ANS: 2

$$P = 2l + 2w$$

$$P - 2l = 2w$$

$$\frac{P - 2l}{2} = w$$

PTS: 2 REF: 010911ia STA: A.A.23 TOP: Transforming Formulas

159 ANS: 2 PTS: 2 REF: 061023ia STA: A.A.23

TOP: Transforming Formulas

160 ANS: 4

$$\frac{ey}{n} + k = t$$

$$\frac{ey}{n} = t - k$$

$$y = \frac{n(t - k)}{e}$$

PTS: 2 REF: 011125ia STA: A.A.23 TOP: Transforming Formulas

161 ANS: 3

$$a + ar = b + r$$

$$a(1 + r) = b + r$$

$$a = \frac{b + r}{1 + r}$$

PTS: 2 REF: 060913ia STA: A.A.23 TOP: Transforming Formulas

162 ANS:

$$bc + ac = ab$$

$$c(b + a) = ab$$

$$c = \frac{ab}{b+a}$$

PTS: 2

REF: 081131ia

STA: A.A.23

TOP: Transforming Formulas

**Integrated Algebra Regents Exam Questions by Performance Indicator: Topic
Answer Section**

163 ANS: 3

$$0.75 \text{ hours} = 45 \text{ minutes. } \frac{120}{1} = \frac{x}{45}$$

$$x = 5400$$

PTS: 2 REF: 080814ia STA: A.M.1 TOP: Using Rate

164 ANS:

$$2,160 \frac{1,200}{25} = \frac{x}{45}$$

$$25x = 54,000$$

$$x = 2,160$$

PTS: 2 REF: 081032ia STA: A.M.1 TOP: Using Rate

165 ANS:

$$\text{Ann's. } \frac{225}{15} = 15 \text{ mpg is greater than } \frac{290}{23.2} = 12.5 \text{ mpg}$$

PTS: 2 REF: 060831ia STA: A.M.1 TOP: Using Rate

166 ANS: 4

$$\frac{5}{45} = \frac{8}{x}$$

$$5x = 360$$

$$x = 72$$

PTS: 2 REF: 060901ia STA: A.M.1 TOP: Speed

167 ANS: 4

$$s = \frac{d}{t} = \frac{150 \text{ m}}{1.5 \text{ min}} \cdot \frac{60 \text{ min}}{1 \text{ hr}} = 6,000 \frac{\text{m}}{\text{hr}}$$

PTS: 2 REF: 061025ia STA: A.M.1 TOP: Speed

168 ANS: 4

$$\frac{\text{distance}}{\text{time}} = \frac{24}{6} = 4$$

PTS: 2 REF: 010902ia STA: A.M.1 TOP: Speed

169 ANS: 1

$$\frac{12.8 + 17.2}{3 + 5} = 3.75$$

PTS: 2 REF: 061117ia STA: A.M.1 TOP: Speed

170 ANS:

$$111.25 \cdot \frac{\text{distance}}{\text{time}} = \frac{89}{0.8} = 111.25$$

PTS: 2 REF: 080831ia STA: A.M.1 TOP: Speed

171 ANS:

Greg's rate of 5.5 is faster than Dave's rate of 5.3. $\frac{\text{distance}}{\text{time}} = \frac{11}{2} = 5.5$. $\frac{16}{3} = 5.\bar{3}$

PTS: 3 REF: 080936ia STA: A.M.1 TOP: Speed

172 ANS:

50, 1.5, 10. $\frac{\text{distance}}{\text{time}} = \frac{60}{1.2} = 50$. $\frac{\text{distance}}{\text{time}} = \frac{60}{40} = 1.5$. speed \times time = $55 \times 2 = 110$. $120 - 110 = 10$

PTS: 3 REF: fall0734ia STA: A.M.1 TOP: Speed

173 ANS: 3

$$F = \frac{9}{5}C + 32 = \frac{9}{5}(15) + 32 = 59$$

PTS: 2 REF: 010901ia STA: A.M.2 TOP: Conversions

174 ANS: 4

$$\frac{344 \text{ m}}{\text{sec}} \times \frac{60 \text{ sec}}{1 \text{ min}} \times \frac{60 \text{ min}}{1 \text{ hr}} = 1,238,400 \frac{\text{m}}{\text{hr}}$$

PTS: 2 REF: 060911ia STA: A.M.2 TOP: Conversions

175 ANS:

16. 12 feet equals 4 yards. $4 \times 4 = 16$.

PTS: 2 REF: 011031ia STA: A.M.2 TOP: Conversions

176 ANS:

$$5. 48 \text{ inches} \times \frac{1 \text{ yard}}{36 \text{ inches}} = \frac{4}{3} \text{ yards} \times \$3.75 = \$5.00$$

PTS: 2 REF: 011131ia STA: A.M.2 TOP: Conversions

177 ANS:

$$77120 + 33500 = 110620 \text{ sq. ft.} \times \frac{1 \text{ acre}}{43560 \text{ sq. ft.}} \approx 2.54 \text{ acres}$$

PTS: 2 REF: 081133ia STA: A.M.2 TOP: Conversions

178 ANS: 2

Candidate *B* received 45%. $45\% \times 1860 = 837$

PTS: 2 REF: 081007ia STA: A.N.5 TOP: Percents

179 ANS:

$$\frac{1}{6}, 16.67\%, \$13.50. \frac{18-15}{18} = \frac{1}{6}. 18 \times 0.75 = 13.5$$

PTS: 3 REF: 060835ia STA: A.N.5 TOP: Percents

180 ANS:

$$30.4\%; \text{no}, 23.3\%. \frac{7.50-5.75}{5.75} = 30.4\%. \frac{7.50-5.75}{7.50} = 23.3\%$$

PTS: 3 REF: 080935ia STA: A.N.5 TOP: Percents

181 ANS:

$$d = 6.25h, 250. d = 6.25(40) = 250$$

PTS: 2 REF: 010933ia STA: A.N.5 TOP: Direct Variation

182 ANS: 4

$$\frac{150}{20} = \frac{x}{30}$$

$$20x = 4500$$

$$x = 225$$

PTS: 2 REF: 081101ia STA: A.N.5 TOP: Direct Variation

183 ANS: 2

TOP: Slope

PTS: 2 REF: 080823ia STA: A.A.32

184 ANS: 1

TOP: Slope

PTS: 2 REF: 081115ia STA: A.A.32

185 ANS: 3

$$m = \frac{4-10}{3-(-6)} = -\frac{2}{3}$$

PTS: 2 REF: fall0716ia STA: A.A.33 TOP: Slope

186 ANS: 3

$$m = \frac{1-(-4)}{-6-4} = -\frac{1}{2}$$

PTS: 2 REF: 060820ia STA: A.A.33 TOP: Slope

187 ANS: 2

$$m = \frac{5-3}{2-7} = -\frac{2}{5}$$

PTS: 2 REF: 010913ia STA: A.A.33 TOP: Slope

188 ANS: 2

$$m = \frac{5-2}{3-(-2)} = \frac{3}{5}$$

PTS: 2 REF: 061004ia STA: A.A.33 TOP: Slope

189 ANS: 3

$$m = \frac{6-4}{3-(-2)} = \frac{2}{5}$$

PTS: 2

REF: 061110ia

STA: A.A.33

TOP: Slope

190 ANS: 1

$$m = \frac{4-(-4)}{-5-15} = -\frac{2}{5}$$

PTS: 2

REF: 080915ia

STA: A.A.33

TOP: Slope

191 ANS: 4

$$A(-3,4) \text{ and } B(5,8). \quad m = \frac{4-8}{-3-5} = \frac{-4}{-8} = \frac{1}{2}$$

PTS: 2

REF: 011007ia

STA: A.A.33

TOP: Slope

192 ANS: 2

$$A(-3,8) \text{ and } B(3,6). \quad m = \frac{8-6}{-3-3} = \frac{2}{-6} = -\frac{1}{3}$$

PTS: 2

REF: 081005ia

STA: A.A.33

TOP: Slope

193 ANS: 2

$$m = \frac{-A}{B} = \frac{-3}{-7} = \frac{3}{7}$$

PTS: 2

REF: 011122ia

STA: A.A.37

TOP: Slope

194 ANS: 2

If the car can travel 75 miles on 4 gallons, it can travel 300 miles on 16 gallons. $\frac{75}{4} = \frac{x}{16}$.

$$x = 300$$

PTS: 2

REF: 080807ia

STA: A.G.4

TOP: Graphing Linear Functions

195 ANS: 1

$$y = mx + b$$

$$-6 = (-3)(4) + b$$

$$b = 6$$

PTS: 2

REF: 060922ia

STA: A.A.34

TOP: Writing Linear Equations

196 ANS: 4

$$y = mx + b$$

$$-1 = (2)(3) + b$$

$$b = -7$$

PTS: 2

REF: 080927ia

STA: A.A.34

TOP: Writing Linear Equations

197 ANS: 1

$$y = mx + b$$

$$5 = (-2)(1) + b$$

$$b = 7$$

PTS: 2

REF: 081108ia

STA: A.A.34

TOP: Writing Linear Equations

198 ANS:

$$y = \frac{3}{4}x + 10. \quad y = mx + b$$

$$4 = \frac{3}{4}(-8) + b$$

$$4 = -6 + b$$

$$10 = b$$

PTS: 3

REF: 011134ia

STA: A.A.34

TOP: Writing Linear Equations

199 ANS: 1

$$m = \frac{3-0}{0-2} = -\frac{3}{2}. \text{ Using the given y-intercept } (0,3) \text{ to write the equation of the line } y = -\frac{3}{2}x + 3.$$

PTS: 2

REF: fall0713ia

STA: A.A.35

TOP: Writing Linear Equations

200 ANS: 3

$$m = \frac{7-3}{-3-3} = \frac{4}{-6} = -\frac{2}{3} \quad y = mx + b$$

$$3 = -\frac{2}{3}(3) + b$$

$$3 = -2 + b$$

$$5 = b$$

PTS: 2

REF: 011013ia

STA: A.A.35

TOP: Writing Linear Equations

201 ANS: 3

PTS: 2

REF: 010910ia

STA: A.A.35

TOP: Writing Linear Equations

202 ANS: 2

$$m = \frac{5-3}{8-1} = \frac{2}{7} \quad y - y_1 = m(x - x_1)$$

$$y - 5 = \frac{2}{7}(x - 8)$$

PTS: 2

REF: 081029ia

STA: A.A.35

TOP: Writing Linear Equations

203 ANS:

$$y = \frac{2}{5}x + 2. \quad m = \frac{4-0}{5-(-5)} = \frac{2}{5}. \quad y = mx + b \quad .$$

$$4 = \frac{2}{5}(5) + b$$

$$b = 2$$

PTS: 3 REF: 080836ia STA: A.A.35 TOP: Writing Linear Equations

204 ANS: 1

$$4y - 2x = 0$$

$$4(-1) - 2(-2) = 0$$

$$-4 + 4 = 0$$

PTS: 2 REF: 011021ia STA: A.A.39 TOP: Identifying Points on a Line

205 ANS: 4

$$2x - 3y = 9$$

$$2(0) - 3(-3) = 9$$

$$0 + 9 = 9$$

PTS: 2 REF: 081016ia STA: A.A.39 TOP: Identifying Points on a Line

206 ANS: 3

$$2(1) + 3 = 5$$

PTS: 2 REF: 061007ia STA: A.A.39 TOP: Linear Equations

207 ANS: 2

PTS: 2

REF: 080810ia

STA: A.A.36

TOP: Parallel and Perpendicular Lines

208 ANS: 1

PTS: 2

REF: 080911ia

STA: A.A.36

TOP: Parallel and Perpendicular Lines

209 ANS: 2

PTS: 2

REF: 081014ia

STA: A.A.36

TOP: Parallel and Perpendicular Lines

210 ANS: 4

PTS: 2

REF: 061112ia

STA: A.A.36

TOP: Parallel and Perpendicular Lines

211 ANS: 1

The slope of both is -4 .

PTS: 2 REF: 060814ia STA: A.A.38 TOP: Parallel and Perpendicular Lines

212 ANS: 1

The slope of $y = 3 - 2x$ is -2 . Using $m = -\frac{A}{B}$, the slope of $4x + 2y = 5$ is $-\frac{4}{2} = -2$.

PTS: 2 REF: 010926ia STA: A.A.38 TOP: Parallel and Perpendicular Lines

213 ANS: 1

The slope of $2x - 4y = 16$ is $\frac{-A}{B} = \frac{-2}{-4} = \frac{1}{2}$

PTS: 2 REF: 011026ia STA: A.A.38 TOP: Parallel and Perpendicular Lines

214 ANS: 2

$y - kx = 7$ may be rewritten as $y = kx + 7$

PTS: 2 REF: 061015ia STA: A.A.38 TOP: Parallel and Perpendicular Lines

215 ANS: 4

$$-6x - 17 \geq 8x + 25$$

$$-42 \geq 14x$$

$$-3 \geq x$$

PTS: 2 REF: 081121ia STA: A.A.24 TOP: Solving Inequalities

216 ANS: 1

$$3(2m - 1) \leq 4m + 7$$

$$6m - 3 \leq 4m + 7$$

$$2m \leq 10$$

$$m \leq 5$$

PTS: 2 REF: 081002ia STA: A.A.24 TOP: Solving Inequalities

217 ANS: 1

$$-2x + 5 > 17$$

$$-2x > 12$$

$$x < -6$$

PTS: 2 REF: fall0724ia STA: A.A.21 TOP: Interpreting Solutions

218 ANS: 4

$$-4x + 2 > 10$$

$$-4x > 8$$

$$x < -2$$

PTS: 2 REF: 080805ia STA: A.A.21 TOP: Interpreting Solutions

219 ANS: 1

$$\frac{4}{3}x + 5 < 17$$

$$\frac{4}{3}x < 12$$

$$4x < 36$$

$$x < 9$$

PTS: 2 REF: 060914ia STA: A.A.21 TOP: Interpreting Solutions

220 ANS: 4

$$-2(x - 5) < 4$$

$$-2x + 10 < 4$$

$$-2x < -6$$

$$x > 3$$

PTS: 2 REF: 080913ia STA: A.A.21 TOP: Interpreting Solutions

221 ANS:

$$-12. 3 \left(\frac{2}{3}x + 3 < -2x - 7 \right)$$

$$x + 9 < -6x - 21$$

$$7x < -30$$

$$x < \frac{-30}{7}$$

PTS: 3 REF: 061034ia STA: A.A.21 TOP: Interpreting Solutions

222 ANS: 1

PTS: 2

REF: 080803ia

STA: A.A.4

TOP: Modeling Inequalities

223 ANS: 4

PTS: 2

REF: 060906ia

STA: A.A.4

TOP: Modeling Inequalities

224 ANS: 2

PTS: 2

REF: 060821ia

STA: A.A.5

TOP: Modeling Inequalities

225 ANS: 2

PTS: 2

REF: 011005ia

STA: A.A.5

TOP: Modeling Inequalities

226 ANS: 4

PTS: 2

REF: fall0715ia

STA: A.A.5

TOP: Modeling Inequalities

227 ANS: 4

PTS: 2

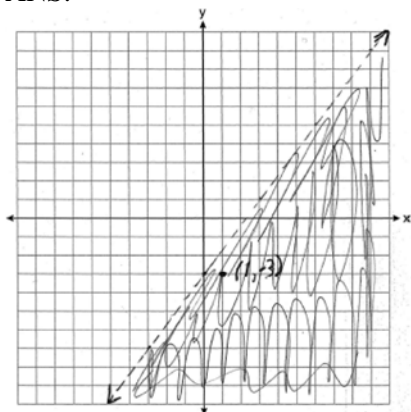
REF: 081107ia

STA: A.A.5

TOP: Modeling Inequalities

- 228 ANS: 1
 $13.95 + 0.49s \leq 50.00$
 $0.49s \leq 36.05$
 $s \leq 73.57$
- PTS: 2 REF: 080904ia STA: A.A.6 TOP: Modeling Inequalities
- 229 ANS: 1
 $0.07m + 19 \leq 29.50$
 $0.07m \leq 10.50$
 $m \leq 150$
- PTS: 2 REF: 010904ia STA: A.A.6 TOP: Modeling Inequalities
- 230 ANS:
 7. $15x + 22 \geq 120$
 $x \geq 6.5\bar{3}$
- PTS: 3 REF: fall0735ia STA: A.A.6 TOP: Modeling Inequalities
- 231 ANS:
 $10 + 2d \geq 75, 33. 10 + 2d \geq 75$
 $d \geq 32.5$
- PTS: 3 REF: 060834ia STA: A.A.6 TOP: Modeling Inequalities
- 232 ANS:
 $0.65x + 35 \leq 45$
 $0.65x \leq 10$
 $x \leq 15$
- PTS: 3 REF: 061135ia STA: A.A.6 TOP: Modeling Inequalities
- 233 ANS: 4 PTS: 2 REF: 061028ia STA: A.G.6
 TOP: Linear Inequalities
- 234 ANS: 2
 The slope of the inequality is $-\frac{1}{2}$.
- PTS: 2 REF: fall0720ia STA: A.G.6 TOP: Linear Inequalities
- 235 ANS: 1 PTS: 2 REF: 060920ia STA: A.G.6
 TOP: Linear Inequalities

236 ANS:



(1, -3) is in the solution set. $4(1) - 3(-3) > 9$

$$4 + 9 > 9$$

PTS: 4 REF: 011038ia STA: A.G.6 TOP: Linear Inequalities

237 ANS: 3 PTS: 2 REF: 011117ia STA: A.G.4

TOP: Graphing Absolute Value Functions

238 ANS: 4

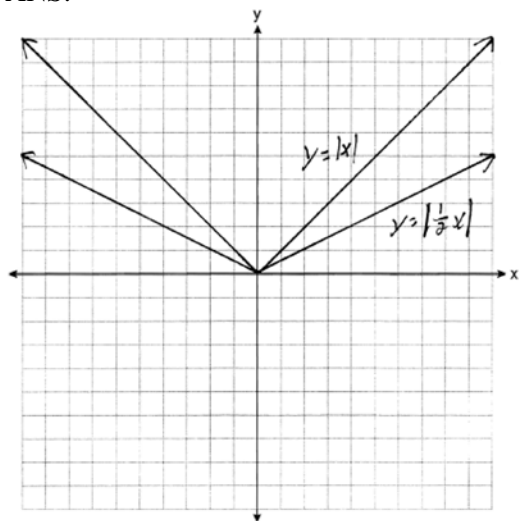
The transformation is a reflection in the x -axis.

PTS: 2 REF: fall0722ia STA: A.G.5 TOP: Graphing Absolute Value Functions

239 ANS: 3 PTS: 2 REF: 011017ia STA: A.G.5

TOP: Graphing Absolute Value Functions

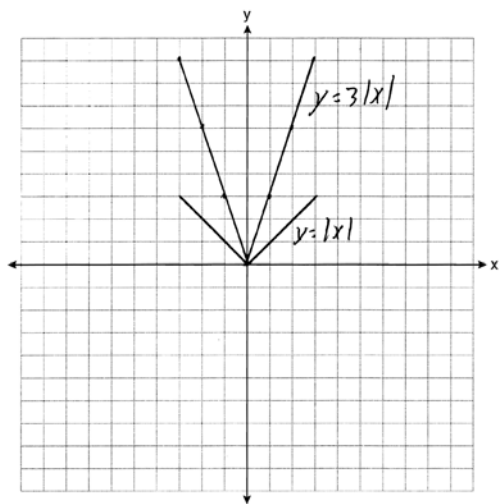
240 ANS:



. Graph becomes wider as the coefficient approaches 0.

PTS: 3 REF: 061035ia STA: A.G.5 TOP: Graphing Absolute Value Functions

241 ANS:



The graph becomes steeper.

PTS: 3 REF: 081134ia STA: A.G.5 TOP: Graphing Absolute Value Functions
 242 ANS: 2 PTS: 2 REF: 061105ia STA: A.A.20
 TOP: Factoring Polynomials

243 ANS: 2

$$2x^2 + 10x - 12 = 2(x^2 + 5x - 6) = 2(x + 6)(x - 1)$$

PTS: 2 REF: 080806ia STA: A.A.20 TOP: Factoring Polynomials
 244 ANS: 2 PTS: 2 REF: 061027ia STA: A.A.20
 TOP: Factoring Polynomials

245 ANS: 2 PTS: 2 REF: 011022ia STA: A.A.19
 TOP: Factoring the Difference of Perfect Squares

246 ANS: 3 PTS: 2 REF: fall0706ia STA: A.A.19
 TOP: Factoring the Difference of Perfect Squares

247 ANS: 3 PTS: 2 REF: 081008ia STA: A.A.19
 TOP: Factoring the Difference of Perfect Squares

248 ANS: 1 PTS: 2 REF: 080902ia STA: A.A.19
 TOP: Factoring the Difference of Perfect Squares

249 ANS: 2 PTS: 2 REF: 010909ia STA: A.A.19
 TOP: Factoring the Difference of Perfect Squares

250 ANS: 3 PTS: 2 REF: 061101ia STA: A.A.19
 TOP: Factoring the Difference of Perfect Squares

251 ANS: 1 PTS: 2 REF: 060804ia STA: A.A.19
 TOP: Factoring the Difference of Perfect Squares

252 ANS: 2

$$36x^2 - 100y^6 = 4(9x^2 - 25y^6) = 4(3x + 5y^3)(3x - 5y^3)$$

PTS: 2 REF: 081129ia STA: A.A.19
 TOP: Factoring the Difference of Perfect Squares

253 ANS: 2

$$a^3 - 4a = a(a^2 - 4) = a(a - 2)(a + 2)$$

PTS: 2 REF: 011108ia STA: A.A.19
TOP: Factoring the Difference of Perfect Squares

254 ANS:

$$4x(x + 3)(x - 3). \quad 4x^3 - 36x = 4x(x^2 - 9) = 4x(x + 3)(x - 3)$$

PTS: 2 REF: 060932ia STA: A.A.19
TOP: Factoring the Difference of Perfect Squares

255 ANS: 3

$$x^2 - 6x = 0$$

$$x(x - 6) = 0$$

$$x = 0 \quad x = 6$$

PTS: 2 REF: 080921ia STA: A.A.27 TOP: Solving Quadratics by Factoring

256 ANS: 4

$$x^2 - 7x + 6 = 0$$

$$(x - 6)(x - 1) = 0$$

$$x = 6 \quad x = 1$$

PTS: 2 REF: 060902ia STA: A.A.28 TOP: Roots of Quadratics

257 ANS: 2

$$x^2 - 5x + 6 = 0$$

$$(x - 3)(x - 2) = 0$$

$$x = 3 \quad x = 2$$

PTS: 2 REF: 081120ia STA: A.A.28 TOP: Roots of Quadratics

258 ANS: 3

$$x^2 - 10x + 21 = 0$$

$$(x - 7)(x - 3) = 0$$

$$x = 7 \quad x = 3$$

PTS: 2 REF: 010914ia STA: A.A.28 TOP: Roots of Quadratics

259 ANS:

$$-2, 3. \quad x^2 - x = 6$$

$$x^2 - x - 6 = 0$$

$$(x - 3)(x + 2) = 0$$

$$x = 3 \text{ or } -2$$

PTS: 3 REF: 011034ia STA: A.A.28 TOP: Roots of Quadratics

260 ANS:

$$-15, 2 \quad x^2 + 13x - 30 = 0$$

$$(x + 15)(x - 2) = 0$$

$$x = -15, 2$$

PTS: 3

REF: 081036ia

STA: A.A.28

TOP: Roots of Quadratics

261 ANS: 2

$$x^2 - 2x - 15 = 0$$

$$(x - 5)(x + 3) = 0$$

$$x = 5 \quad x = -3$$

PTS: 2

REF: 011128ia

STA: A.A.28

TOP: Roots of Quadratics

262 ANS: 2

PTS: 2

REF: 061113ia

STA: A.G.5

TOP: Graphing Quadratic Functions

263 ANS: 4

PTS: 2

REF: 060829ia

STA: A.G.5

TOP: Graphing Quadratic Functions

264 ANS: 1

PTS: 2

REF: 081015ia

STA: A.G.5

TOP: Graphing Quadratic Functions

265 ANS: 3

PTS: 2

REF: 060924ia

STA: A.G.8

TOP: Solving Quadratics by Graphing

266 ANS: 2

PTS: 2

REF: 080916ia

STA: A.G.8

TOP: Solving Quadratics by Graphing

267 ANS: 4

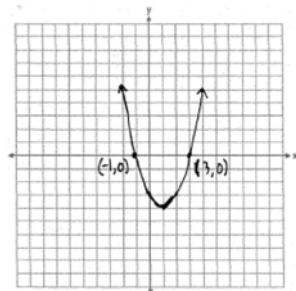
PTS: 2

REF: 011111ia

STA: A.G.8

TOP: Solving Quadratics by Graphing

268 ANS:



PTS: 3

REF: 060836ia

STA: A.G.8

TOP: Solving Quadratics by Graphing

269 ANS: 1

$$x^2 - 36 = 5x$$

$$x^2 - 5x - 36 = 0$$

$$(x - 9)(x + 4) = 0$$

$$x = 9$$

PTS: 2

REF: 061020ia

STA: A.A.8

TOP: Writing Quadratics

270 ANS:

6, 8, 10. Three consecutive even integers are x , $x + 2$ and $x + 4$. $(x + 2)(x + 4) = 10x + 20$

$$x^2 + 6x + 8 = 10x + 20$$

$$x^2 - 4x - 12 = 0$$

$$(x - 6)(x + 2) = 0$$

$$x = 6$$

PTS: 4

REF: 011039ia

STA: A.A.8

TOP: Writing Quadratics

271 ANS: 2

$$l(l - 5) = 24$$

$$l^2 - 5l - 24 = 0$$

$$(l - 8)(l + 3) = 0$$

$$l = 8$$

PTS: 2

REF: 080817ia

STA: A.A.8

TOP: Geometric Applications of Quadratics

272 ANS: 2

$$l(l - 3) = 40$$

$$l^2 - 3l - 40 = 0$$

$$(l - 8)(l + 5) = 0$$

$$l = 8$$

PTS: 2

REF: 081116ia

STA: A.A.8

TOP: Geometric Applications of Quadratics

273 ANS:

 $w(w + 15) = 54$, 3, 18. $w(w + 15) = 54$

$$w^2 + 15w - 54 = 0$$

$$(w + 18)(w - 3) = 0$$

$$w = 3$$

PTS: 4

REF: 060837ia

STA: A.A.8

TOP: Geometric Applications of Quadratics

274 ANS: 1

PTS: 2

REF: 080813ia

STA: A.G.10

TOP: Identifying the Vertex of a Quadratic Given Graph

275 ANS: 2

PTS: 2

REF: 010916ia

STA: A.G.10

TOP: Identifying the Vertex of a Quadratic Given Graph

276 ANS: 2

PTS: 2

REF: 011015ia

STA: A.G.10

TOP: Identifying the Vertex of a Quadratic Given Graph

277 ANS: 1

PTS: 2

REF: 060811ia

STA: A.G.10

TOP: Identifying the Vertex of a Quadratic Given Graph

278 ANS: 1

PTS: 2

REF: 061005ia

STA: A.G.10

TOP: Identifying the Vertex of a Quadratic Given Graph

279 ANS: 2 PTS: 2 REF: 081111ia STA: A.G.10
TOP: Identifying the Vertex of a Quadratic Given Graph

280 ANS:
 $x = 1; (1, -5)$

PTS: 2 REF: 061133ia STA: A.G.10
TOP: Identifying the Vertex of a Quadratic Given Graph

281 ANS: 1
 $x = \frac{-b}{2a} = \frac{-6}{2(-1)} = 3.$

PTS: 2 REF: 011127ia STA: A.A.41
TOP: Identifying the Vertex of a Quadratic Given Equation

282 ANS: 3
 $x = \frac{-b}{2a} = \frac{-10}{2(-1)} = 5.$

PTS: 2 REF: 081018ia STA: A.A.41
TOP: Identifying the Vertex of a Quadratic Given Equation

283 ANS: 1
 $x = \frac{-b}{2a} = \frac{-(-16)}{2(1)} = 8. \quad y = (8)^2 - 16(8) + 63 = -1$

PTS: 2 REF: 060918ia STA: A.A.41
TOP: Identifying the Vertex of a Quadratic Given Equation

284 ANS:
 $(-2, 11). \quad x = \frac{-b}{2a} = \frac{-(-8)}{2(-2)} = -2$
 $y = -2(-2)^2 - 8(-2) + 3 = 11$

PTS: 3 REF: 080934ia STA: A.A.41
TOP: Identifying the Vertex of a Quadratic Given Equation

285 ANS: 2
 $x + 2y = 9$
 $x - y = 3$
 $3y = 6$
 $y = 2$

PTS: 2 REF: 060925ia STA: A.A.10 TOP: Solving Linear Systems

286 ANS: 1
 $x - 2y = 1$

$$x + 4y = 7$$

$$-6y = -6$$

$$y = 1$$

PTS: 2

REF: 080920ia

STA: A.A.10

TOP: Solving Linear Systems

287 ANS: 2

$$2(x - 3y = -3)$$

$$2x + y = 8$$

$$2x - 6y = -6$$

$$7y = 14$$

$$y = 2$$

PTS: 2

REF: 081021ia

STA: A.A.10

TOP: Solving Linear Systems

288 ANS: 3

$$2x - 5y = 11 \quad 2x - 5(-1) = 11$$

$$-2x + 3y = -9$$

$$2x = 6$$

$$-2y = 2$$

$$x = 3$$

$$y = -1$$

PTS: 2

REF: 081109ia

STA: A.A.10

TOP: Solving Linear Systems

289 ANS: 3

$$c + 3d = 8 \quad c = 4d - 6$$

$$4d - 6 + 3d = 8 \quad c = 4(2) - 6$$

$$7d = 14 \quad c = 2$$

$$d = 2$$

PTS: 2

REF: 061012ia

STA: A.A.10

TOP: Solving Linear Systems

290 ANS:

$$(-2, 5). \quad 3x + 2y = 4 \quad 12x + 8y = 16. \quad 3x + 2y = 4$$

$$4x + 3y = 7 \quad 12x + 9y = 21 \quad 3x + 2(5) = 4$$

$$y = 5$$

$$3x = -6$$

$$x = -2$$

PTS: 4

REF: 010937ia

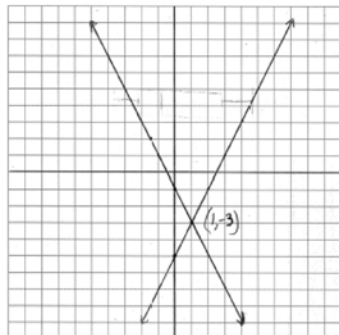
STA: A.A.10

TOP: Solving Linear Systems

291 ANS: 3
 $5x + 2y = 48$
 $3x + 2y = 32$
 $2x = 16$
 $x = 8$

PTS: 2 REF: fall0708ia STA: A.A.10 TOP: Solving Linear Systems

292 ANS:



PTS: 4 REF: 080938ia STA: A.G.7 TOP: Solving Linear Systems

293 ANS: 2
 $L + S = 47$
 $L - S = 15$
 $2L = 62$
 $L = 31$

PTS: 2 REF: 060912ia STA: A.A.7 TOP: Writing Linear Systems

294 ANS: 1
 $f + m = 53$
 $f - m = 25$
 $2m = 28$
 $m = 14$

PTS: 2 REF: 061126ia STA: A.A.7 TOP: Writing Linear Systems

295 ANS: 3
 $b = 42 - r$ $r = 2b + 3$
 $r = 2b + 3$ $r = 2(42 - r) + 3$
 $r = 84 - 2r + 3$
 $3r = 87$
 $r = 29$

PTS: 2 REF: 060812ia STA: A.A.7 TOP: Writing Linear Systems

- 296 ANS: 2
 $s + o = 126$. $s + 2s = 126$
 $o = 2s$ $s = 42$
- PTS: 2 REF: 080811ia STA: A.A.7 TOP: Writing Linear Systems
- 297 ANS: 1
 $b = 2j + 4$ $2j + 4 = 31 - j$
 $b + j = 31$ $3j = 27$
 $b = 31 - j$ $j = 9$
- PTS: 2 REF: 081119ia STA: A.A.7 TOP: Writing Linear Systems
- 298 ANS: 1
 $so = f + 60$ $j = 2f - 50$ $se = 3f$. $f + (f + 60) + (2f - 50) + 3f = 1424$
 $7f + 10 = 1424$
 $f = 202$
- PTS: 2 REF: 060917ia STA: A.A.7 TOP: Writing Linear Systems
- 299 ANS: 1
 $1P + 2C = 5$
 $1P + 4C = 6$
 $2C = 1$
 $C = 0.5$
- PTS: 2 REF: 011003ia STA: A.A.7 TOP: Writing Linear Systems
- 300 ANS: 2
 $3c + 4m = 12.50$
 $3c + 2m = 8.50$
 $2m = 4.00$
 $m = 2.00$
- PTS: 2 REF: 060806ia STA: A.A.7 TOP: Writing Linear Systems
- 301 ANS: 2
 $J - M = 3$
 $8J + 8M = 120$
 $8J - 8M = 24$
 $16J = 144$
 $J = 9$
- PTS: 2 REF: 011115ia STA: A.A.7 TOP: Writing Linear Systems

302 ANS:

$$m = 50¢, p = 15¢. \quad 3m + 2p = 1.80. \quad 9m + 6p = 5.40 \quad . \quad 4(.50) + 6p = 2.90$$

$$4m + 6p = 2.90 \quad 4m + 6p = 2.90 \quad 6p = .90$$

$$5m = 2.50 \quad p = \$0.15$$

$$m = \$0.50$$

PTS: 3 REF: 080837ia STA: A.A.7 TOP: Writing Linear Systems

303 ANS: 1 PTS: 2 REF: 061010ia STA: A.A.40

TOP: Systems of Linear Inequalities

304 ANS: 2 PTS: 2 REF: 081127ia STA: A.A.40

TOP: Systems of Linear Inequalities

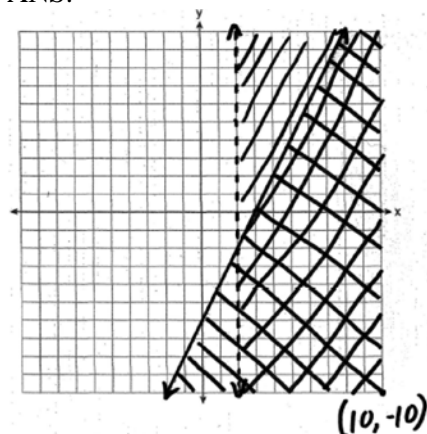
305 ANS: 4 PTS: 2 REF: 080825ia STA: A.A.40

TOP: Systems of Linear Inequalities

306 ANS: 2 PTS: 2 REF: 011023ia STA: A.A.40

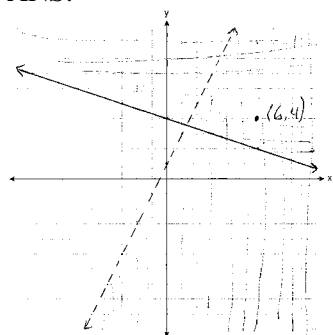
TOP: Systems of Linear Inequalities

307 ANS:



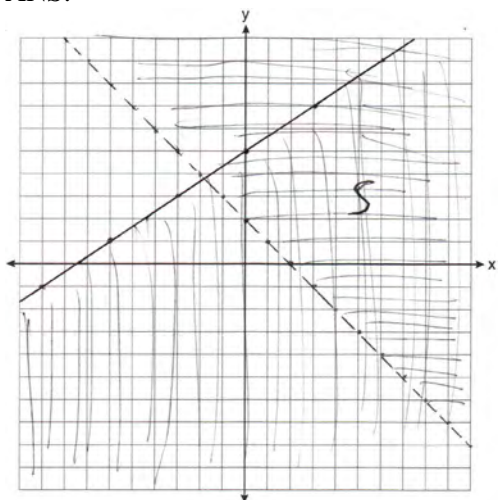
PTS: 4 REF: 010938ia STA: A.G.7 TOP: Systems of Linear Inequalities

308 ANS:



PTS: 4 REF: 081037ia STA: A.G.7 TOP: Systems of Linear Inequalities

309 ANS:



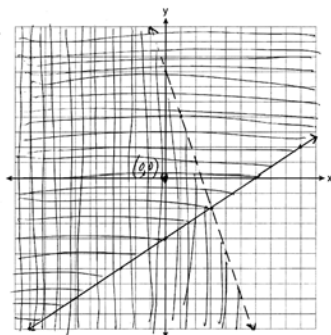
PTS: 4

REF: 011139ia

STA: A.G.7

TOP: Systems of Linear Inequalities

310 ANS:



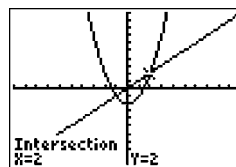
PTS: 4

REF: 061139ia

STA: A.G.7

TOP: Systems of Linear Inequalities

311 ANS: 4



$$x^2 - 2 = x \quad \text{Since } y = x, \text{ the solutions are } (2, 2) \text{ and } (-1, -1).$$

$$x^2 - x - 2 = 0$$

$$(x - 2)(x + 1) = 0$$

$$x = 2 \text{ or } -1$$

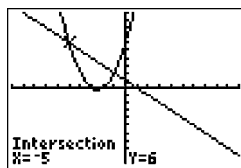
PTS: 2

REF: 060810ia

STA: A.A.11

TOP: Quadratic-Linear Systems

312 ANS: 2



$$x^2 + 5x + 6 = -x + 1, \quad y = -x + 1$$

$$x^2 + 6x + 5 = 0 \quad = -(-5) + 1$$

$$(x + 5)(x + 1) = 0 \quad = 6$$

$$x = -5 \text{ or } -1$$

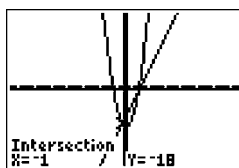
PTS: 2

REF: 080812ia

STA: A.A.11

TOP: Quadratic-Linear Systems

313 ANS: 2



$$x^2 - x - 20 = 3x - 15, \quad y = 3x - 15$$

$$x^2 - 4x - 6 = 0 \quad = 3(-1) - 15$$

$$(x - 5)(x + 1) = 0 \quad = -18$$

$$x = 5 \text{ or } -1$$

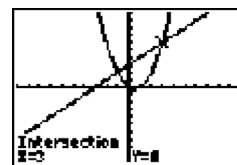
PTS: 2

REF: 010922ia

STA: A.A.11

TOP: Quadratic-Linear Systems

314 ANS: 2



$$x^2 - x = x + 3 \quad . \text{ Since } y = x + 3, \text{ the solutions are } (3, 6) \text{ and } (-1, 2).$$

$$x^2 - 2x - 3 = 0$$

$$(x - 3)(x + 1) = 0$$

$$x = 3 \text{ or } -1$$

PTS: 2

REF: 061118ia

STA: A.A.11

TOP: Quadratic-Linear Systems

315 ANS: 2

PTS: 2

REF: 011012ia

STA: A.G.9

TOP: Quadratic-Linear Systems

316 ANS: 1

$$2y - 2x = 10 \quad \text{axis of symmetry: } x = \frac{-b}{2a} = \frac{-2}{2(1)} = -1$$

$$2y = 2x + 10$$

$$y = x + 5$$

PTS: 2

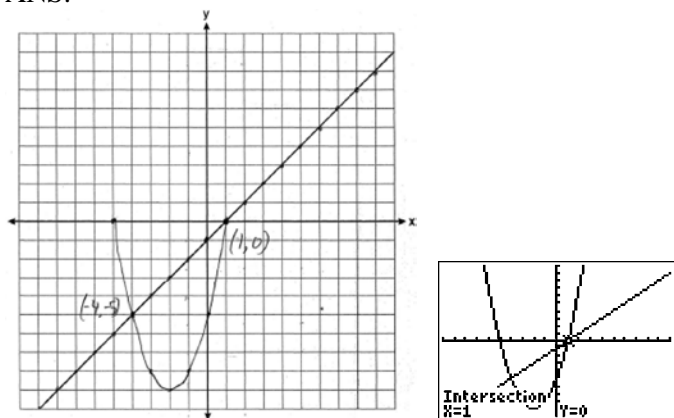
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STA: A.G.9

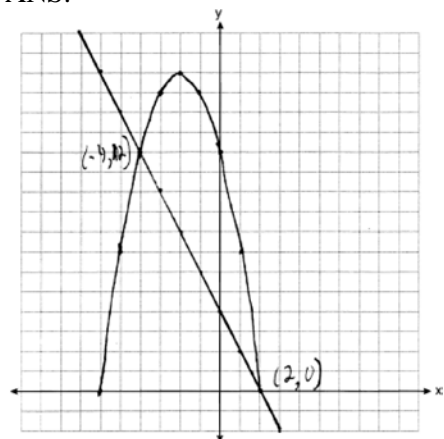
TOP: Quadratic-Linear Systems

317 ANS: 4 PTS: 2 REF: 011102ia STA: A.G.9
 TOP: Quadratic-Linear Systems

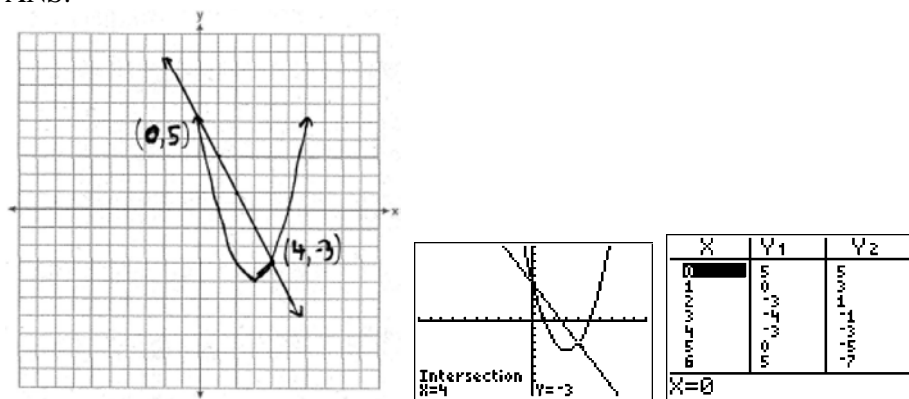
318 ANS:



PTS: 4 REF: 080839ia STA: A.G.9 TOP: Quadratic-Linear Systems
 319 ANS:

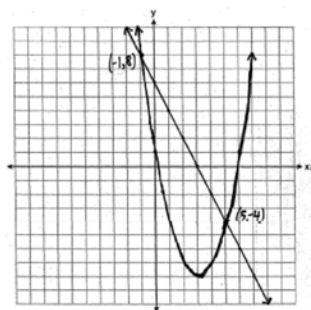


PTS: 4 REF: 061039ia STA: A.G.9 TOP: Quadratic-Linear Systems
 320 ANS:



PTS: 4 REF: fall0738ia STA: A.G.9 TOP: Quadratic-Linear Systems

321 ANS:



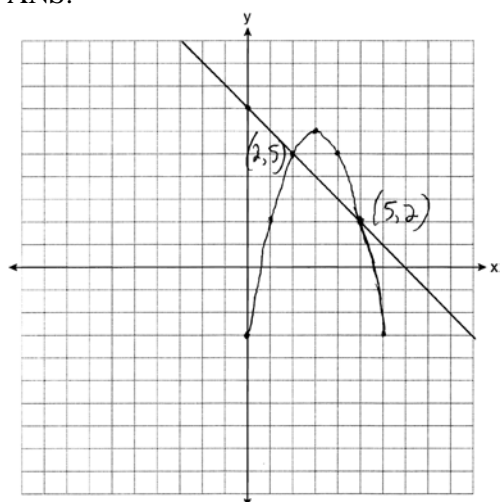
PTS: 4

REF: 060939ia

STA: A.G.9

TOP: Quadratic-Linear Systems

322 ANS:



PTS: 4

REF: 081138ia

STA: A.G.9

TOP: Quadratic-Linear Systems

**Integrated Algebra Regents Exam Questions by Performance Indicator: Topic
Answer Section**

- 323 ANS: 4
 $-3x(x-4) - 2x(x+3) = -3x^2 + 12x - 2x^2 - 6x = -5x^2 + 6x$
- PTS: 2 REF: 081114ia STA: A.A.13 TOP: Addition and Subtraction of Monomials
- 324 ANS: 3 PTS: 2 REF: 061003ia STA: A.A.13
 TOP: Addition and Subtraction of Polynomials KEY: addition
- 325 ANS: 3 PTS: 2 REF: 080819ia STA: A.A.13
 TOP: Addition and Subtraction of Polynomials KEY: subtraction
- 326 ANS: 2 PTS: 2 REF: 060923ia STA: A.A.13
 TOP: Addition and Subtraction of Polynomials KEY: subtraction
- 327 ANS: 1 PTS: 2 REF: 011126ia STA: A.A.13
 TOP: Addition and Subtraction of Polynomials KEY: subtraction
- 328 ANS: 4 PTS: 2 REF: 061130ia STA: A.A.13
 TOP: Addition and Subtraction of Polynomials KEY: subtraction
- 329 ANS: 1 PTS: 2 REF: 060807ia STA: A.A.13
 TOP: Multiplication of Polynomials
- 330 ANS: 3
 $\frac{12x^3 - 6x^2 + 2x}{2x} = \frac{2x(6x^2 - 3x + 1)}{2x} = 6x^2 - 3x + 1$
- PTS: 2 REF: 011011ia STA: A.A.14 TOP: Division of Polynomials
- 331 ANS:
 $3a^2b^2 - 6a \cdot \frac{45a^4b^3 - 90a^3b}{15a^2b} = \frac{45a^4b^3}{15a^2b} - \frac{90a^3b}{15a^2b} = 3a^2b^2 - 6a$
- PTS: 2 REF: 081031ia STA: A.A.14 TOP: Division of Polynomials
- 332 ANS:
 $\frac{x^2 - 5x - 24}{x - 8} = \frac{(x - 8)(x + 3)}{x - 8} = x + 3$
- PTS: 2 REF: 061131ia STA: A.A.14 TOP: Division of Polynomials
- 333 ANS: 4 PTS: 2 REF: 011020ia STA: A.A.12
 TOP: Multiplication of Powers
- 334 ANS: 4 PTS: 2 REF: 080903ia STA: A.A.12
 TOP: Multiplication of Powers
- 335 ANS: 4
 $\frac{2^6}{2^1} = 2^5$
- PTS: 2 REF: 060813ia STA: A.A.12 TOP: Division of Powers
- 336 ANS: 1 PTS: 2 REF: 060903ia STA: A.A.12
 TOP: Division of Powers

- 337 ANS: 4 PTS: 2 REF: 061018ia STA: A.A.12
TOP: Division of Powers
- 338 ANS: 1 PTS: 2 REF: 061103ia STA: A.A.12
TOP: Division of Powers
- 339 ANS: 3
$$\frac{(2x^3)(8x^5)}{4x^6} = \frac{16x^8}{4x^6} = 4x^2$$
- PTS: 2 REF: fall0703ia STA: A.A.12 TOP: Division of Powers
- 340 ANS:
$$\frac{3k^2m^6}{4}$$
- PTS: 2 REF: 010932ia STA: A.A.12 TOP: Division of Powers
- 341 ANS: 4 PTS: 2 REF: 080827ia STA: A.A.12
TOP: Powers of Powers
- 342 ANS: 3
$$\frac{(10w^3)^2}{5w} = \frac{100w^6}{5w} = 20w^5$$
- PTS: 2 REF: 011124ia STA: A.A.12 TOP: Powers of Powers
- 343 ANS: 4 PTS: 2 REF: 010927ia STA: A.N.4
TOP: Operations with Scientific Notation
- 344 ANS: 4 PTS: 2 REF: 060927ia STA: A.N.4
TOP: Operations with Scientific Notation
- 345 ANS: 2 PTS: 2 REF: 061127ia STA: A.N.4
TOP: Operations with Scientific Notation
- 346 ANS: 2 PTS: 2 REF: fall0725ia STA: A.N.4
TOP: Operations with Scientific Notation
- 347 ANS: 4
$$\frac{9.2 \times 10^6}{2.3 \times 10^2} = 4 \times 10^4$$
- PTS: 2 REF: 081006ia STA: A.N.4 TOP: Operations with Scientific Notation
- 348 ANS: 3
$$500(1 + 0.06)^3 \approx 596$$
- PTS: 2 REF: 080929ia STA: A.A.9 TOP: Exponential Functions
- 349 ANS: 2
$$2000(1 + 0.04)^3 \approx 2249$$
- PTS: 2 REF: 081124ia STA: A.A.9 TOP: Exponential Functions

350 ANS: 1

$$15000(1.2)^{\frac{6}{3}} = 21,600. \quad 21,600 - 15,000 = 6,600$$

PTS: 2 REF: 061030ia STA: A.A.9 TOP: Exponential Functions

351 ANS:

$$5,583.86. \quad A = P(1 + R)^t = 5000(1 + 0.0375)^3 \approx 5583.86$$

PTS: 3 REF: 060935ia STA: A.A.9 TOP: Exponential Functions

352 ANS: 4 PTS: 2 REF: 010908ia STA: A.A.9

TOP: Exponential Functions

353 ANS: 2 PTS: 2 REF: 060830ia STA: A.A.9

TOP: Exponential Functions

354 ANS: 3

$$35000(1 - 0.05)^4 \approx 28507.72$$

PTS: 2 REF: fall0719ia STA: A.A.9 TOP: Exponential Functions

355 ANS: 2

$$20000(.88)^3 = 13629.44$$

PTS: 2 REF: 061124ia STA: A.A.9 TOP: Exponential Functions

356 ANS: 2

$$R = 0.5^{d-1}$$

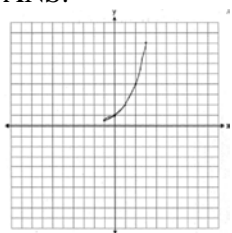
PTS: 2 REF: 011006ia STA: A.A.9 TOP: Exponential Functions

357 ANS:

$$24,435.19. \quad 30000(.95)^4 \approx 24435.19$$

PTS: 4 REF: 011138ia STA: A.A.9 TOP: Exponential Functions

358 ANS:

. The graph will never intersect the x -axis as $2^x > 0$ for all values of x .

PTS: 3 REF: 080835ia STA: A.G.4 TOP: Graphing Exponential Functions

359 ANS: 2

$$\sqrt{32} = \sqrt{16} \sqrt{2} = 4\sqrt{2}$$

PTS: 2 REF: 060910ia STA: A.N.2 TOP: Simplifying Radicals

360 ANS: 3

$$\sqrt{72} = \sqrt{36}\sqrt{2} = 6\sqrt{2}$$

PTS: 2 REF: 010920ia STA: A.N.2 TOP: Simplifying Radicals

361 ANS: 3

$$3\sqrt{250} = 3\sqrt{25}\sqrt{10} = 15\sqrt{10}$$

PTS: 2 REF: 061106ia STA: A.N.2 TOP: Simplifying Radicals

362 ANS: 2

$$5\sqrt{20} = 5\sqrt{4}\sqrt{5} = 10\sqrt{5}$$

PTS: 2 REF: 080922ia STA: A.N.2 TOP: Simplifying Radicals

363 ANS: 1

$$\frac{\sqrt{32}}{4} = \frac{\sqrt{16}\sqrt{2}}{4} = \sqrt{2}$$

PTS: 2 REF: 060828ia STA: A.N.2 TOP: Simplifying Radicals

364 ANS:

$$-3\sqrt{48} = -3\sqrt{16}\sqrt{3} = -12\sqrt{3}$$

PTS: 2 REF: 081033ia STA: A.N.2 TOP: Simplifying Radicals

365 ANS:

$$30\sqrt{2} \cdot 5\sqrt{72} = 5\sqrt{36}\sqrt{2} = 30\sqrt{2}$$

PTS: 2 REF: fall0731ia STA: A.N.2 TOP: Simplifying Radicals

366 ANS: 4

$$6\sqrt{50} + 6\sqrt{2} = 6\sqrt{25}\sqrt{2} + 6\sqrt{2} = 30\sqrt{2} + 6\sqrt{2} = 36\sqrt{2}$$

PTS: 2 REF: 011024ia STA: A.N.3 TOP: Operations with Radicals

KEY: addition

367 ANS: 3

$$3\sqrt{2} + \sqrt{8} = 3\sqrt{2} + \sqrt{4}\sqrt{2} = 3\sqrt{2} + 2\sqrt{2} = 5\sqrt{2}$$

PTS: 2 REF: 011121ia STA: A.N.3 TOP: Operations with Radicals

KEY: addition

368 ANS: 3

$$\sqrt{72} - 3\sqrt{2} = \sqrt{36}\sqrt{2} - 3\sqrt{2} = 6\sqrt{2} - 3\sqrt{2} = 3\sqrt{2}$$

PTS: 2 REF: 061008ia STA: A.N.3 TOP: Operations with Radicals

KEY: subtraction

369 ANS:

$$-2\sqrt{3} \frac{16\sqrt{21}}{2\sqrt{7}} - 5\sqrt{12} = 8\sqrt{3} - 5\sqrt{4}\sqrt{3} = 8\sqrt{3} - 10\sqrt{3} = -2\sqrt{3}$$

PTS: 3 REF: 081136ia STA: A.N.3 TOP: Operations with Radicals

370 ANS:

$$60 - 42\sqrt{5} \cdot 3\sqrt{20}(2\sqrt{5} - 7) = 6\sqrt{100} - 21\sqrt{20} = 60 - 21\sqrt{4}\sqrt{5} = 60 - 42\sqrt{5}$$

PTS: 3 REF: 080834ia STA: A.N.3 TOP: Operations with Radicals
KEY: multiplication

371 ANS: 2

$$\frac{9x^4 - 27x^6}{3x^3} = \frac{9x^4(1 - 3x^2)}{3x^3} = 3x(1 - 3x^2)$$

PTS: 2 REF: fall0718ia STA: A.A.16 TOP: Rational Expressions
KEY: $a > 0$

372 ANS: 2

$$\frac{2x^2 - 12x}{x - 6} = \frac{2x(x - 6)}{x - 6} = 2x$$

PTS: 2 REF: 060824ia STA: A.A.16 TOP: Rational Expressions
KEY: $a > 0$

373 ANS: 4

$$\frac{25x - 125}{x^2 - 25} = \frac{25(x - 5)}{(x + 5)(x - 5)} = \frac{25}{x + 5}$$

PTS: 2 REF: 080821ia STA: A.A.16 TOP: Rational Expressions
KEY: $a > 0$

374 ANS: 2

$$\frac{x^2 - 2x - 15}{x^2 + 3x} = \frac{(x - 5)(x + 3)}{x(x + 3)} = \frac{x - 5}{x}$$

PTS: 2 REF: 060921ia STA: A.A.16 TOP: Rational Expressions
KEY: $a > 0$

375 ANS: 1

$$\frac{x^2 - x - 6}{x^2 - 5x + 6} = \frac{(x - 3)(x + 2)}{(x - 3)(x + 2)} = \frac{x + 2}{x - 2}$$

PTS: 2 REF: 011130ia STA: A.A.16 TOP: Rational Expressions
KEY: $a > 0$

376 ANS: 3 PTS: 2 REF: 060817ia STA: A.A.15

TOP: Undefined Rationals

377 ANS: 4 PTS: 2 REF: 060916ia STA: A.A.15

TOP: Undefined Rationals

378 ANS: 1 PTS: 2 REF: fall0728ia STA: A.A.15

TOP: Undefined Rationals

379 ANS: 2 PTS: 2 REF: 010925ia STA: A.A.15

TOP: Undefined Rationals

380 ANS: 3

$$x^2 - 9 = 0$$

$$(x+3)(x-3) = 0$$

$$x = \pm 3$$

PTS: 2

REF: 061014ia

STA: A.A.15

TOP: Undefined Rationals

381 ANS: 1

$$x^2 + 7x + 10 = 0$$

$$(x+5)(x+2) = 0$$

$$x = -5 \text{ or } -2$$

PTS: 2

REF: 080918ia

STA: A.A.15

TOP: Undefined Rationals

382 ANS: 4

$$x^2 - 4x - 12 = 0$$

$$(x-6)(x+2) = 0$$

$$x = 6 \text{ or } x = -2$$

PTS: 2

REF: 061125ia

STA: A.A.15

TOP: Undefined Rationals

383 ANS: 4

$$\frac{x^2 - 1}{x + 1} \cdot \frac{x + 3}{3x - 3} = \frac{(x+1)(x-1)}{x+1} \cdot \frac{x+3}{3(x-1)} = \frac{x+3}{3}$$

PTS: 2

REF: 060815ia

STA: A.A.18

TOP: Multiplication and Division of Rationals

384 ANS: 1

$$\frac{4x}{x-1} \cdot \frac{x^2-1}{3x+3} = \frac{4x}{x-1} \cdot \frac{(x+1)(x-1)}{3(x+1)} = \frac{4x}{3}$$

PTS: 2

REF: 080826ia

STA: A.A.18

TOP: Multiplication and Division of Rationals

385 ANS: 4

$$\frac{x}{x+4} \div \frac{2x}{x^2-16} = \frac{x}{x+4} \cdot \frac{x^2-16}{2x} = \frac{1}{x+4} \cdot \frac{(x+4)(x-4)}{2} = \frac{x-4}{2}$$

PTS: 2

REF: 081130ia

STA: A.A.18

TOP: Multiplication and Division of Rationals

386 ANS:

$$\frac{3}{4x-8} \cdot \frac{3x+6}{4x+12} \div \frac{x^2-4}{x+3} = \frac{3(x+2)}{4(x+3)} \cdot \frac{x+3}{(x+2)(x-2)} = \frac{3}{4(x-2)}$$

PTS: 3

REF: 010935ia

STA: A.A.18

TOP: Multiplication and Division of Rationals

387 ANS:

$$\frac{x-7}{3x} \cdot \frac{2x^2-8x-42}{6x^2} \div \frac{x^2-9}{x^2-3x} = \frac{2(x^2-4x-21)}{6x^2} \cdot \frac{x(x-3)}{(x+3)(x-3)} = \frac{(x-7)(x+3)}{3x} \cdot \frac{1}{x+3} = \frac{x-7}{3x}$$

PTS: 4 REF: 080937ia STA: A.A.18 TOP: Multiplication and Division of Rationals

388 ANS:

$$\frac{x^2+9x+14}{x^2-49} \div \frac{3x+6}{x^2+x-56} = \frac{(x+7)(x+2)}{(x+7)(x-7)} \cdot \frac{(x+8)(x-7)}{3(x+2)} = \frac{x+8}{3}$$

PTS: 4 REF: 061037ia STA: A.A.18 TOP: Multiplication and Division of Rationals

389 ANS: 4

$$\frac{(d \times 3) + (2 \times 2d)}{2 \times 3} = \frac{3d + 4d}{6} = \frac{7d}{6}$$

PTS: 2 REF: fall0727ia STA: A.A.17 TOP: Addition and Subtraction of Rationals

390 ANS: 2

$$\frac{3}{2x} + \frac{4}{3x} = \frac{9x+8x}{6x^2} = \frac{17x}{6x^2} = \frac{17}{6x}$$

PTS: 2 REF: 080917ia STA: A.A.17 TOP: Addition and Subtraction of Rationals

391 ANS: 2

$$\frac{3}{2x} + \frac{7}{4x} = \frac{12x+14x}{8x^2} = \frac{26x}{8x^2} = \frac{13}{4x}$$

PTS: 2 REF: 011120ia STA: A.A.17 TOP: Addition and Subtraction of Rationals

392 ANS: 2

$$\frac{6}{5x} - \frac{2}{3x} = \frac{18x-10x}{15x^2} = \frac{8x}{15x^2} = \frac{8}{15x}$$

PTS: 2 REF: 010921ia STA: A.A.17 TOP: Addition and Subtraction of Rationals

393 ANS: 2

$$\frac{6}{4a} - \frac{2}{3a} = \frac{18a-8a}{12a^2} = \frac{10a}{12a^2} = \frac{5}{6a}$$

PTS: 2 REF: 060929ia STA: A.A.17 TOP: Addition and Subtraction of Rationals

394 ANS: 4

$$\frac{7}{12x} - \frac{y}{6x^2} = \frac{42x^2-12xy}{72x^3} = \frac{6x(7x-2y)}{72x^3} = \frac{7x-2y}{12x^2}$$

PTS: 2 REF: 061129ia STA: A.A.17 TOP: Addition and Subtraction of Rationals

395 ANS: 3

$$\frac{2+x}{5x} - \frac{x-2}{5x} = \frac{2+x-x+2}{5x} = \frac{4}{5x}$$

PTS: 2 REF: 081027ia STA: A.A.17 TOP: Addition and Subtraction of Rationals

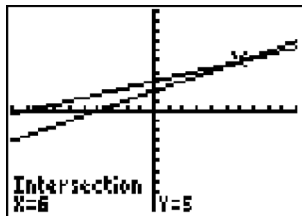
396 ANS: 4 PTS: 2 REF: 011025ia STA: A.A.17

TOP: Addition and Subtraction of Rationals

397 ANS: 1 PTS: 2 REF: 061024ia STA: A.A.17

TOP: Addition and Subtraction of Rationals

398 ANS: 3



$$\frac{k+4}{2} = \frac{k+9}{3}$$

$$3(k+4) = 2(k+9)$$

$$3k + 12 = 2k + 18$$

$$k = 6$$

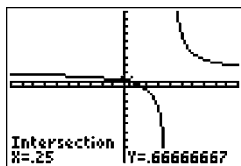
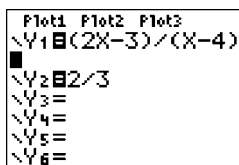
PTS: 2

REF: 010906ia

STA: A.A.26

TOP: Solving Rationals

399 ANS: 2



$$\frac{2x-3}{x-4} = \frac{2}{3}$$

$$3(2x-3) = 2(x-4)$$

$$6x - 9 = 2x - 8$$

$$4x = 1$$

$$x = \frac{1}{4}$$

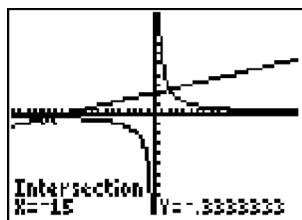
PTS: 2

REF: 081012ia

STA: A.A.26

TOP: Solving Rationals

400 ANS: 4



$$\frac{5}{x} = \frac{x+13}{6}$$

$$x^2 + 13x = 30$$

$$x^2 + 13x - 30 = 0$$

$$(x+15)(x-2) = 0$$

$$x = -15 \text{ or } 2$$

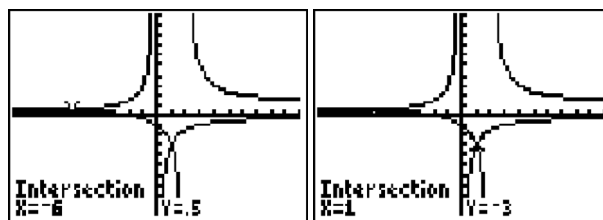
PTS: 2

REF: 060826ia

STA: A.A.26

TOP: Solving Rationals

401 ANS: 4



$$\frac{x+2}{x-2} = \frac{-3}{x}$$

$$x(x+2) = -3(x-2)$$

$$x^2 + 2x = -3x + 6$$

$$x^2 + 5x - 6 = 0$$

$$(x+6)(x-1) = 0$$

$$x = -6 \text{ or } 1$$

PTS: 2

REF: 011028ia

STA: A.A.26

TOP: Solving Rationals

402 ANS: 1

$$\frac{2}{x} - 3 = \frac{26}{x}$$

$$-3 = \frac{24}{x}$$

$$x = -8$$

PTS: 2

REF: 010918ia

STA: A.A.26

TOP: Solving Rationals

403 ANS:

$$6, -2. \quad \frac{x+1}{x} = \frac{-7}{x-12}$$

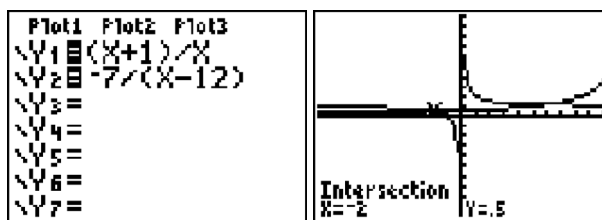
$$(x+1)(x-12) = -7x$$

$$x^2 - 11x - 12 = -7x$$

$$x^2 - 4x - 12 = 0$$

$$(x-6)(x+2) = 0$$

$$x = 6 \text{ or } -2$$



PTS: 4 REF: fall0739ia STA: A.A.26 TOP: Solving Rationals

404 ANS:

$$4, -5. \quad \frac{x+2}{6} = \frac{3}{x-1}$$

$$(x+2)(x-1) = 18$$

$$x^2 - x + 2x - 2 = 18$$

$$x^2 + x - 20 = 0$$

$$(x+5)(x-4) = 0$$

$$x = -5 \text{ or } 4$$

PTS: 3 REF: 011136ia STA: A.A.26 TOP: Solving Rationals

405 ANS:

$$-\frac{9}{4}. \quad \frac{3}{4} = \frac{-(x+11)}{4x} + \frac{1}{2x}$$

$$\frac{3}{4} = \frac{-x-11}{4x} + \frac{2}{4x}$$

$$\frac{3}{4} = \frac{-x-9}{4x}$$

$$12x = -4x - 36$$

$$16x = -36$$

$$x = -\frac{9}{4}$$

PTS: 4 REF: 061137ia STA: A.A.26 TOP: Solving Rationals

406 ANS: 4 PTS: 2 REF: fall0717ia STA: A.G.4

TOP: Families of Functions

- 407 ANS: 4 PTS: 2 REF: 061111ia STA: A.G.4
TOP: Families of Functions
- 408 ANS: 1 PTS: 2 REF: 060801ia STA: A.G.4
TOP: Families of Functions
- 409 ANS: 3 PTS: 2 REF: 081118ia STA: A.G.4
TOP: Families of Functions
- 410 ANS: 4 PTS: 2 REF: 081025ia STA: A.G.4
TOP: Families of Functions
- 411 ANS: 1 PTS: 2 REF: 010905ia STA: A.G.4
TOP: Families of Functions
- 412 ANS: 3 PTS: 2 REF: 080925ia STA: A.G.4
TOP: Identifying the Equation of a Graph
- 413 ANS: 4 PTS: 2 REF: fall0730ia STA: A.G.3
TOP: Defining Functions
- 414 ANS: 4 PTS: 2 REF: 061013ia STA: A.G.3
TOP: Defining Functions
- 415 ANS: 4 PTS: 2 REF: 010930ia STA: A.G.3
TOP: Defining Functions
- 416 ANS: 3 PTS: 2 REF: 060919ia STA: A.G.3
TOP: Defining Functions
- 417 ANS: 4
In (4), each element in the domain corresponds to a unique element in the range.
- PTS: 2 REF: 011018ia STA: A.G.3 TOP: Defining Functions
- 418 ANS: 4
In (4), each element in the domain corresponds to a unique element in the range.
- PTS: 2 REF: 011105ia STA: A.G.3 TOP: Defining Functions
- 419 ANS: 2
In (2), each element in the domain corresponds to a unique element in the range.
- PTS: 2 REF: 061116ia STA: A.G.3 TOP: Defining Functions
- 420 ANS: 3
An element of the domain, 1, is paired with two different elements of the range, 3 and 7.
- PTS: 2 REF: 080919ia STA: A.G.3 TOP: Defining Functions
- 421 ANS: 3
 $3^2 + 5^2 = x^2$
 $34 = x^2$
 $\sqrt{34} = x$
- PTS: 2 REF: 060909ia STA: A.A.45 TOP: Pythagorean Theorem

- 422 ANS: 1
 $30^2 + 40^2 = c^2$. 30, 40, 50 is a multiple of 3, 4, 5.
 $2500 = c^2$
 $50 = c$
- PTS: 2 REF: fall0711ia STA: A.A.45 TOP: Pythagorean Theorem
- 423 ANS: 1
 $8^2 + 15^2 = c^2$
 $c^2 = 289$
 $c = 17$
- PTS: 2 REF: 080906ia STA: A.A.45 TOP: Pythagorean Theorem
- 424 ANS: 2
 $\sqrt{5^2 + 7^2} \approx 8.6$
- PTS: 2 REF: 081004ia STA: A.A.45 TOP: Pythagorean Theorem
- 425 ANS: 3
 $10^2 + 10^2 = c^2$
 $c^2 = 200$
 $c \approx 14.1$
- PTS: 2 REF: 061102ia STA: A.A.45 TOP: Pythagorean Theorem
- 426 ANS: 3 PTS: 2 REF: 060825ia STA: A.A.45
TOP: Pythagorean Theorem
- 427 ANS: 2
 $\sqrt{18.4^2 - 7^2} \approx 17$
- PTS: 2 REF: 011107ia STA: A.A.45 TOP: Pythagorean Theorem
- 428 ANS: 4
 $16^2 + b^2 = 34^2$
 $b^2 = 900$
 $b = 30$
- PTS: 2 REF: 080809ia STA: A.A.45 TOP: Pythagorean Theorem
- 429 ANS: 1
 $\sin C = \frac{\text{opposite}}{\text{hypotenuse}} = \frac{13}{85}$
- PTS: 2 REF: fall0721ia STA: A.A.42 TOP: Trigonometric Ratios

430 ANS: 2

$$\sin U = \frac{\text{opposite}}{\text{hypotenuse}} = \frac{15}{17}$$

PTS: 2 REF: 010919ia STA: A.A.42 TOP: Trigonometric Ratios

431 ANS: 1

$$\sin x = \frac{\text{opposite}}{\text{hypotenuse}} = \frac{28}{53}$$

PTS: 2 REF: 011109ia STA: A.A.42 TOP: Trigonometric Ratios

432 ANS: 2

$$\tan ABC = \frac{\text{opposite}}{\text{adjacent}} = \frac{5}{12}$$

PTS: 2 REF: 081112ia STA: A.A.42 TOP: Trigonometric Ratios

433 ANS: 2

$$\tan B = \frac{\text{opposite}}{\text{adjacent}} = \frac{8}{15} = 0.5\bar{3}$$

PTS: 2 REF: 081026ia STA: A.A.42 TOP: Trigonometric Ratios

434 ANS: 2

$$\tan A = \frac{\text{opposite}}{\text{adjacent}} = \frac{14}{48}$$

PTS: 2 REF: 061009ia STA: A.A.42 TOP: Trigonometric Ratios

435 ANS: 3

$$\cos A = \frac{\text{adjacent}}{\text{hypotenuse}} = \frac{15}{17}$$

PTS: 2 REF: 011008ia STA: A.A.42 TOP: Trigonometric Ratios

436 ANS: 3

$$\cos 30 = \frac{x}{24}$$

$$x \approx 21$$

PTS: 2 REF: 010912ia STA: A.A.44 TOP: Using Trigonometry to Find a Side

437 ANS: 2

$$\tan 32 = \frac{x}{25}$$

$$x \approx 15.6$$

PTS: 2 REF: 080914ia STA: A.A.44 TOP: Using Trigonometry to Find a Side

438 ANS: 2

$$\sin 57 = \frac{x}{8}$$

$$x \approx 6.7$$

PTS: 2

REF: 061108ia

STA: A.A.44

TOP: Using Trigonometry to Find a Side

439 ANS: 2

$$\cos 38 = \frac{10}{x}$$

$$x = \frac{10}{\cos 38} \approx 12.69$$

PTS: 2

REF: 081126ia

STA: A.A.44

TOP: Using Trigonometry to Find a Side

440 ANS:

$$2.1. \cos 65 = \frac{x}{5}$$

$$x \approx 2.1$$

PTS: 2

REF: 011133ia

STA: A.A.44

TOP: Using Trigonometry to Find a Side

441 ANS:

$$39, 63. \tan 52 = \frac{50}{x} \quad \sin 52 = \frac{50}{x}$$

$$x \approx 39 \quad x \approx 63$$

PTS: 4

REF: 060937ia

STA: A.A.44

TOP: Using Trigonometry to Find a Side

442 ANS:

$$84, 71 \quad \sin 50 = \frac{x}{110} \quad \cos 50 = \frac{y}{110}$$

$$x \approx 84 \quad y \approx 71$$

PTS: 4

REF: 081039ia

STA: A.A.44

TOP: Using Trigonometry to Find a Side

443 ANS: 1

PTS: 2

REF: 080824ia

STA: A.A.43

TOP: Using Trigonometry to Find an Angle

444 ANS: 2

$$\sin A = \frac{8}{12}$$

$$A \approx 42$$

PTS: 2

REF: 060816ia

STA: A.A.43

TOP: Using Trigonometry to Find an Angle

445 ANS: 1

PTS: 2

REF: 061114ia

STA: A.A.43

TOP: Using Trigonometry to Find an Angle

446 ANS: 3

$$\sin A = \frac{10}{16} \quad B = 180 - (90 + 38.7) = 51.3. \quad \text{A } 90^\circ \text{ angle is not acute.}$$

$$A \approx 38.7$$

PTS: 2

REF: 080829ia

STA: A.A.43

TOP: Using Trigonometry to Find an Angle

447 ANS:

$$\sin x = \frac{30}{50}$$

$$x = \sin^{-1} \frac{3}{5}$$

$$x \approx 37$$

PTS: 2

REF: 061033ia

STA: A.A.43

TOP: Using Trigonometry to Find an Angle

448 ANS:

$$53. \sin A = \frac{16}{20}$$

$$A \approx 53$$

PTS: 2

REF: 011032ia

STA: A.A.43

TOP: Using Trigonometry to Find an Angle

449 ANS:

$$41.8. \sin x = \frac{8}{12}$$

$$A \approx 41.8$$

PTS: 3

REF: 081135ia

STA: A.A.43

TOP: Using Trigonometry to Find an Angle

450 ANS: 1

PTS: 2

REF: 080924ia

STA: A.G.1

TOP: Compositions of Polygons and Circles

KEY: perimeter

451 ANS: 1

$$7 + 8 + 7 + \frac{12\pi}{2} = 22 + 6\pi$$

PTS: 2

REF: 081128ia

STA: A.G.1

TOP: Compositions of Polygons and Circles

KEY: perimeter

452 ANS:

33.4. Serena needs 24 (9 + 6 + 9) feet of fencing to surround the rectangular portion of the garden. The length of the fencing needed for the semicircular portion of the garden is $\frac{1}{2} \pi d = 3\pi \approx 9.4$ feet.

PTS: 2

REF: fall0733ia

STA: A.G.1

TOP: Compositions of Polygons and Circles

KEY: perimeter

453 ANS:

$$50. 12 + 10 + 12 + \frac{1}{2}(10\pi) \approx 50$$

PTS: 2 REF: 010931ia STA: A.G.1 TOP: Compositions of Polygons and Circles
KEY: perimeter

454 ANS: 2

$$A = lw + \frac{\pi r^2}{2} = 6 \cdot 5 + \frac{\pi \cdot 3^2}{2} \approx 44.1$$

PTS: 2 REF: 061029ia STA: A.G.1 TOP: Compositions of Polygons and Circles
KEY: area

455 ANS: 2 PTS: 2 REF: 080815ia STA: A.G.1

TOP: Compositions of Polygons and Circles KEY: area

456 ANS: 2

$$A = lw + lw + \frac{\pi r^2}{4} = 5 \cdot 3 + 5 \cdot 3 + \frac{\pi \cdot 3^2}{4} \approx 37$$

PTS: 2 REF: 011123ia STA: A.G.1 TOP: Compositions of Polygons and Circles
KEY: area

457 ANS: 2

shaded = whole – unshaded

= rectangle-triangle

$$= lw - \frac{1}{2}bh$$

$$= 15 \times 6 - \frac{1}{2} \times 15 \times 4.6$$

$$= 90 - 34.5$$

$$= 55.5$$

PTS: 2 REF: 081019ia STA: A.G.1 TOP: Compositions of Polygons and Circles
KEY: area

458 ANS:

$$36 - 9\pi. \quad 15.6. \quad \text{Area of square} - \text{area of 4 quarter circles. } (3 + 3)^2 - 3^2\pi = 36 - 9\pi$$

PTS: 2 REF: 060832ia STA: A.G.1 TOP: Compositions of Polygons and Circles
KEY: area

459 ANS:

56. If the circumference of circle O is 16π inches, the diameter, \overline{AD} , is 16 inches and the length of \overline{BC} is 12 inches $\frac{3}{4} \times 16$. The area of trapezoid $ABCD$ is $\frac{1}{2} \times 4(12 + 16) = 56$.

PTS: 3 REF: 060934ia STA: A.G.1 TOP: Compositions of Polygons and Circles
KEY: area

- 460 ANS: 2
 $1.5^3 = 3.375$
- PTS: 2 REF: 060809ia STA: A.G.2 TOP: Volume
- 461 ANS:
 $5,112. (12 \times 30 \times 16) - (6 \times 12 \times 9) = 5112$
- PTS: 2 REF: 080932ia STA: A.G.2 TOP: Volume
- 462 ANS: 4
 $V = \pi r^2 h = \pi \cdot 6^2 \cdot 15 \approx 1696.5$
- PTS: 2 REF: fall0712ia STA: A.G.2 TOP: Volume
- 463 ANS: 3
 $V = \pi r^2 h = \pi \cdot 5^2 \cdot 2.3 \approx 180.6$
- PTS: 2 REF: 081105ia STA: A.G.2 TOP: Volume
- 464 ANS:
 $\frac{38}{\pi}, 2. V = \pi r^2 h \cdot \frac{36}{\left(\frac{38}{\pi}\right)} \approx 2.97.$ Three cans will not fit. The maximum number is 2.
 $342 = \pi \left(\frac{6}{2}\right)^2 h$
 $\frac{342}{9\pi} = h$
 $\frac{38}{\pi} = h$
- PTS: 3 REF: 010936ia STA: A.G.2 TOP: Volume
- 465 ANS: 4
 $SA = 2lw + 2hw + 2lh = 2(3)(1.5) + 2(2)(1.5) + 2(3)(2) = 27$
- PTS: 2 REF: 060827ia STA: A.G.2 TOP: Surface Area
- 466 ANS: 4
 $SA = 2lw + 2hw + 2lh = 2(2)(3) + 2(4)(3) + 2(2)(4) = 52$
- PTS: 2 REF: 011029ia STA: A.G.2 TOP: Surface Area
- 467 ANS:
 $2(x+3)(x-4) + 2(5)(x-4) + 2(x+3)(5)$
 $2(x^2 - 4x + 3x - 12) + 10(x-4) + 10(x+3)$
 $2x^2 - 2x - 24 + 10x - 40 + 10x + 30$
 $2x^2 + 18x - 34$
- PTS: 3 REF: 061136ia STA: A.G.2 TOP: Surface Area

468 ANS:

$$80, 136 \quad V = lwh = 10 \cdot 2 \cdot 4 = 80 \quad SA = 2lw + 2hw + 2lh = 2 \cdot 10 \cdot 2 + 2 \cdot 4 \cdot 2 + 2 \cdot 10 \cdot 4 = 136$$

PTS: 3

REF: 081035ia

STA: A.G.2

TOP: Surface Area