A.SSE.A.1: Modeling Expressions 1

1 What is the constant term of the polynomial $4d + 6 + 3d^2$?
1) 6
2) 2
3) 3
4) 4

2 When $3x^2 + 7x - 6 + 2x^3$ is written in standard form, the leading coefficient is
1) 7
2) 2
3) 3
4) −6

3 What is the degree of the polynomial $2x + x^3 + 5x^2$?
1) 1
2) 2
3) 3
4) 4

4 What is the degree of the polynomial $2x - x^2 + 4x^3$?
1) 1
2) 2
3) 3
4) 4

5 What is the degree of the polynomial $5x - 3x^2 - 1 + 7x^3$?
1) 1
2) 2
3) 3
4) 5

6 Which polynomial has a leading coefficient of 4 and a degree of 3?
1) $3x^4 - 2x^2 + 4x - 7$
2) $4 + x - 4x^2 + 5x^3$
3) $4x^4 - 3x^3 + 2x^2$
4) $2x + x^2 + 4x^3$

7 Students were asked to write an expression which had a leading coefficient of 3 and a constant term of −4. Which response is correct?
1) $3 - 2x^3 - 4x$
2) $7x^3 - 3x^5 - 4$
3) $4 - 7x + 3x^3$
4) $-4x^2 + 3x^4 - 4$

8 A student creates a fourth-degree trinomial with a leading coefficient of 2 and a constant value of 5. The trinomial could be
1) $2x^4 + 3x^2 + 5$
2) $2x^4 + 5x + 3$
3) $4x^2 - 3x + 5$
4) $4x^3 - 5x^2 + 3$

9 An expression of the fifth degree is written with a leading coefficient of seven and a constant of six. Which expression is correctly written for these conditions?
1) $6x^5 + x^4 + 7$
2) $7x^6 - 6x^4 + 5$
3) $6x^7 - x^5 + 5$
4) $7x^5 + 2x^2 + 6$

10 An example of a sixth-degree polynomial with a leading coefficient of seven and a constant term of four is
1) $6x^7 - x^5 + 2x + 4$
2) $4 + x + 7x^6 - 3x^2$
3) $7x^4 + 6 + x^2$
4) $5x + 4x^6 + 7$

11 Students were asked to write $2x^3 + 3x + 4x^2 + 1$ in standard form. Four student responses are shown below.

Alexa: $4x^2 + 3x + 2x^3 + 1$
Carol: $2x^3 + 3x + 4x^2 + 1$
Ryan: $2x^3 + 4x^2 + 3x + 1$
Eric: $1 + 2x^3 + 3x + 4x^2$

Which student's response is correct?
1) Alexa
2) Carol
3) Ryan
4) Eric

12 Students were asked to write $6x^5 + 8x - 3x^3 + 7x^7$ in standard form. Shown below are four student responses.

Anne: $7x^7 + 6x^5 - 3x^3 + 8x$
Bob: $-3x^3 + 6x^5 + 7x^7 + 8x$
Carrie: $8x + 7x^7 + 6x^5 - 3x^3$
Dylan: $8x - 3x^3 + 6x^5 + 7x^7$

Which student is correct?
1) Anne
2) Bob
3) Carrie
4) Dylan

13 Which statement is correct about the polynomial $3x^2 + 5x - 2$?
1) It is a third-degree polynomial with a constant term of −2.
2) It is a third-degree polynomial with a leading coefficient of 3.
3) It is a second-degree polynomial with a constant term of 2.
4) It is a second-degree polynomial with a leading coefficient of 3.

14 Mrs. Allard asked her students to identify which of the polynomials below are in standard form and explain why.
  I. $15x^4 - 6x + 3x^2 - 1$
  II. $12x^3 + 8x + 4$
  III. $2x^5 + 8x^2 + 10x$
Which student's response is correct?
1) Tyler said I and II because the coefficients are decreasing.
2) Susan said only II because all the numbers are decreasing.
3) Fred said II and III because the exponents are decreasing.
4) Alyssa said II and III because they each have three terms.

15 When $(x)(x - 5)(2x + 3)$ is expressed as a polynomial in standard form, which statement about the resulting polynomial is true?
1) The constant term is 2.
2) The leading coefficient is 2.
3) The degree is 2.
4) The number of terms is 2.

16 When multiplying polynomials for a math assignment, Pat found the product to be $-4x + 8x^2 - 2x^3 + 5$. He then had to state the leading coefficient of this polynomial. Pat wrote down -4. Do you agree with Pat's answer? Explain your reasoning.

17 Konnor wants to burn 250 Calories while exercising for 45 minutes at the gym. On the treadmill, he can burn 6 Cal/min. On the stationary bike, he can burn 5 Cal/min. If t represents the number of minutes on the treadmill and b represents the number of minutes on the stationary bike, which expression represents the number of Calories that Konnor can burn on the stationary bike?
1) b
2) $5b$
3) $45 - b$
4) $250 - 5b$

18 To watch a varsity basketball game, spectators must buy a ticket at the door. The cost of an adult ticket is $3.00 and the cost of a student ticket is $1.50. If the number of adult tickets sold is represented by a and student tickets sold by s, which expression represents the amount of money collected at the door from the ticket sales?
1) $4.50as$
2) $4.50(a + s)$
3) $(3.00a)(1.50s)$
4) $3.00a + 1.50s$

19 Bryan's hockey team is purchasing jerseys. The company charges $250 for a onetime set-up fee and $23 for each printed jersey. Which expression represents the total cost of x number of jerseys for the team?
1) $23x$
2) $23 + 250x$
3) $23x + 250$
4) $23(x + 250)$

20 Andy has $310 in his account. Each week, w, he withdraws $30 for his expenses. Which expression could be used if he wanted to find out how much money he had left after 8 weeks?
1) $310 - 8w$
2) $280 + 30(w - 1)$
3) $310w - 30$
4) $280 - 30(w - 1)$

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Answer Section

  1 ANS: 1   REF: 082208ai

  2 ANS: 2

$2x^3 + 3x^2 + 7x - 6$

     REF: 082216ai

  3 ANS: 3   REF: 082309ai

  4 ANS: 3   REF: 062408ai

  5 ANS: 3   REF: 012414ai

  6 ANS: 4

$4x^3 + x^2 + 2x$

     REF: 012024ai

  7 ANS: 4

$3x^4 - 4x^2 - 4$

     REF: 062122ai

  8 ANS: 1   REF: 082405ai

  9 ANS: 4   REF: 061602ai

10 ANS: 2   REF: 062220ai

11 ANS: 3   REF: 012303ai

12 ANS: 1   REF: 061905ai

13 ANS: 4   REF: 062323ai

14 ANS: 3   REF: 061819ai

15 ANS: 2

$(x^2 - 5x)(2x + 3) = 2x^3 + 3x^2 - 10x^2 - 15x = 2x^3 - 7x^2 - 15x$

     REF: 081912ai

16 ANS:

No, −2 is the coefficient of the term with the highest power.

     REF: 081628ai

17 ANS: 2   REF: 081712ai

18 ANS: 4   REF: 081503ai

19 ANS: 3   REF: 081901ai

20 ANS: 4   REF: 011718ai