

A.APR.D.7: Rationalizing Denominators 5

1 Simplify: $3\sqrt{\frac{2a+3b}{3}}$

7 Simplify: $\sqrt{\frac{a^2b}{c}}$

2 Simplify: $\sqrt{\frac{a^4b^3}{2}}$

8 Simplify: $(a-b)\sqrt{\frac{a+b}{a-b}}$

3 Simplify: $\sqrt{\frac{1}{a}}$

9 Simplify: $\frac{\sqrt{a^2-b^2}}{\sqrt{(a-b)^2}}$

4 Simplify: $\sqrt{\frac{1}{ab}}$

10 The fraction $\frac{3}{\sqrt{3a^2b}}$ is equivalent to

1) $\frac{1}{a\sqrt{b}}$ 2) $\frac{\sqrt{b}}{ab}$ 3) $\frac{\sqrt{3b}}{ab}$ 4) $\frac{\sqrt{3}}{a}$

5 Simplify: $\sqrt{\frac{a}{b}}$

6 For all values for which the function is defined, the expression $\sqrt{\frac{a}{bc}}$ is equivalent to

1) \sqrt{a} 2) $\frac{a\sqrt{bc}}{bc}$ 3) \sqrt{abc} 4) $\frac{\sqrt{abc}}{bc}$

11 The expression $\frac{2x+4}{\sqrt{x+2}}$ is equivalent to

1) $\frac{(2x+4)\sqrt{x-2}}{x-2}$ 2) $\frac{(2x+4)\sqrt{x-2}}{x-4}$
3) $2\sqrt{x-2}$ 4) $2\sqrt{x+2}$

12 The expression $\frac{\sqrt{x}}{\sqrt{x}-1}$ is equivalent to

- 1) $x + \sqrt{x}$ 2) $\frac{x + \sqrt{x}}{x-1}$ 3) $\frac{\sqrt{x}-1}{x}$
 4) $1 - \sqrt{x}$

18 Simplify: $\sqrt{\frac{a}{2}} + \frac{\sqrt{2a}}{2}$

19 Simplify: $\sqrt{\frac{1}{a}} + \sqrt[3]{\frac{1}{b}}$

13 Expressed with a rational denominator and in simplest form, $\frac{x}{x-\sqrt{x}}$ is

- 1) $\frac{x^2 + x\sqrt{x}}{x^2 - x}$ 2) $-\sqrt{x}$ 3) $\frac{x + \sqrt{x}}{1-x}$
 4) $\frac{x + \sqrt{x}}{x-1}$

20 Simplify: $b\sqrt{a} - a^2b^2\sqrt{\frac{1}{ab^2}} + \sqrt{a^3b^2}$

21 Simplify: $\frac{\sqrt{x} - \sqrt{x-2}}{\sqrt{x} + \sqrt{x-2}}$

14 Simplify: $\sqrt[3]{\frac{2a^4}{3b^2}}$

15 Simplify: $\frac{2a}{3x}\sqrt[3]{\frac{27x^4}{a^2}}$

16 Simplify: $\frac{a}{b}\sqrt[5]{\frac{32a}{b^2}}$

17 Simplify: $\sqrt[8]{\frac{a^4b^2}{c}}$

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Answer Section

1 ANS:
 $\sqrt{6a+9b}$

REF: 089312al

2 ANS:
 $\frac{a^2b\sqrt{2b}}{2}$

REF: 019415al

3 ANS:
 $\frac{\sqrt{a}}{a}$

REF: 039413al

4 ANS:
 $\frac{\sqrt{ab}}{ab}$

REF: 039505al

5 ANS:
 $\frac{\sqrt{ab}}{b}$

REF: 119411al

6 ANS: 4
 $\sqrt{\frac{a}{bc}} \sqrt{\frac{bc}{bc}} = \frac{\sqrt{abc}}{bc}$

REF: 081610a2

7 ANS:
 $\frac{a\sqrt{bc}}{c}$

REF: 019615al

8 ANS:
 $\sqrt{a^2-b^2}$

REF: 099414al

9 ANS:

$$\frac{\sqrt{a^2 - b^2}}{a - b}$$

REF: 060012a1

10 ANS: 3

$$\frac{3}{\sqrt{3a^2b}} = \frac{3}{a\sqrt{3b}} \cdot \frac{\sqrt{3b}}{\sqrt{3b}} = \frac{3\sqrt{3b}}{3ab} = \frac{\sqrt{3b}}{ab}$$

REF: 081019a2

11 ANS: 4

$$\frac{2x+4}{\sqrt{x+2}} \cdot \frac{\sqrt{x+2}}{\sqrt{x+2}} = \frac{2(x+2)\sqrt{x+2}}{x+2} = 2\sqrt{x+2}$$

REF: 011122a2

12 ANS: 2

REF: 080221siii

13 ANS: 4

$$\frac{x}{x - \sqrt{x}} \times \frac{x + \sqrt{x}}{x + \sqrt{x}} = \frac{x^2 + x\sqrt{x}}{x^2 - x} = \frac{x(x + \sqrt{x})}{x(x - 1)} = \frac{x + \sqrt{x}}{x - 1}$$

REF: 061325a2

14 ANS:

$$\frac{a^3\sqrt{18ab}}{3b}$$

REF: 099602a1

15 ANS:

$$2^3\sqrt{ax}$$

REF: 019811a1

16 ANS:

$$\frac{2a^5\sqrt{ab^3}}{b^3}$$

REF: 039807a1

17 ANS:

$$\frac{\sqrt[8]{a^4b^2c^7}}{c}$$

REF: 099911a1

18 ANS:

$$\sqrt{2a}$$

REF: 119411al

19 ANS:

$$\frac{b\sqrt{a} + a\sqrt[3]{b^2}}{ab}$$

REF: 089710al

20 ANS:

$$b\sqrt{a}$$

REF: 060505al

21 ANS:

$$x - 1 - \sqrt{x^2 - 2x}$$

REF: 030504al