

Review Radicals and Rational Exponents

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Simplify.

1) $2\sqrt{12b}$

2) $3\sqrt{8xy}$

3) $-3\sqrt{27n}$

4) $2\sqrt[3]{24x^3y}$

5) $2\sqrt{12ab}$

6) $-\sqrt[3]{54x^2y^4}$

Multiply and simplify.

7) $\sqrt{5} \cdot \sqrt{20}$

8) $-2\sqrt{20} \cdot \sqrt{8}$

9) $-3\sqrt{8r^3} \cdot 2\sqrt{2r^2}$

10) $-\sqrt{12b} \cdot -4\sqrt{8b^3}$

11) $\sqrt{3b^3} \cdot 5\sqrt{6b^3}$

12) $\sqrt[6]{2n^2} \cdot 4\sqrt[6]{3n^5}$

Simplify each radical expression, if necessary. Add or subtract, if possible.

13) $3\sqrt{45} + 2\sqrt{45}$

14) $-3\sqrt{27} - \sqrt{3}$

15) $3\sqrt{8} - 2\sqrt{18}$

16) $2\sqrt{27} + 2\sqrt{3}$

Multiply and Simplify.

17) $\sqrt{2}(\sqrt{2} + \sqrt{5})$

18) $-5\sqrt{10}(\sqrt{10} + 2)$

19) $\sqrt{3}(\sqrt{5} + 2\sqrt{6})$

20) $\sqrt{5}(3\sqrt{10} + 3)$

21) $\sqrt{3}(\sqrt{2} + 5)$

22) $3\sqrt{15}(4 + \sqrt{10})$

Multiply and simplify.

23) $(\sqrt{5} - 4)(\sqrt{5} + 5)$

24) $(-3 - 5\sqrt{5})(-3 + \sqrt{5})$

Divide and simplify.

$$25) \frac{5\sqrt{16}}{\sqrt{25}}$$

$$26) \frac{\sqrt{9}}{4\sqrt{16}}$$

$$27) \frac{\sqrt{3}}{\sqrt{48}}$$

$$28) \frac{3\sqrt{15}}{\sqrt{5}}$$

$$29) \frac{5\sqrt{5}}{3\sqrt{4}}$$

$$30) \frac{\sqrt{20}}{2\sqrt{36}}$$

Solve each equation.

$$31) \sqrt{11b+3} = 5$$

$$32) -6 = -8 + \sqrt{2p+20}$$

$$33) -5 + \sqrt{m+7} = -2$$

$$34) \sqrt{9m-2} = 5$$

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Simplify.

1) $2\sqrt{12b}$

$4\sqrt{3b}$

3) $-3\sqrt{27n}$

$-9\sqrt{3n}$

5) $2\sqrt{12ab}$

$4\sqrt{3ab}$

Multiply and simplify.

7) $\sqrt{5} \cdot \sqrt{20}$

10

9) $-3\sqrt{8r^3} \cdot 2\sqrt{2r^2}$

$-24r^2\sqrt{r}$

11) $\sqrt{3b^3} \cdot 5\sqrt{6b^3}$

$15b^3\sqrt{2}$

Simplify each radical expression, if necessary. Add or subtract, if possible.

$$13) 3\sqrt{45} + 2\sqrt{45}$$
$$15\sqrt{5}$$

$$15) 3\sqrt{8} - 2\sqrt{18}$$
$$0$$

Multiply and Simplify.

$$17) \sqrt{2}(\sqrt{2} + \sqrt{5})$$
$$2 + \sqrt{10}$$

$$19) \sqrt{3}(\sqrt{5} + 2\sqrt{6})$$
$$\sqrt{15} + 6\sqrt{2}$$

$$21) \sqrt{3}(\sqrt{2} + 5)$$
$$\sqrt{6} + 5\sqrt{3}$$

Multiply and simplify.

$$23) (\sqrt{5} - 4)(\sqrt{5} + 5)$$
$$-15 + \sqrt{5}$$

Divide and simplify.

$$25) \frac{5\sqrt{16}}{\sqrt{25}}$$

4

$$27) \frac{\sqrt{3}}{\sqrt{48}}$$

$\frac{1}{4}$

$$29) \frac{5\sqrt{5}}{3\sqrt{4}}$$

$\frac{5\sqrt{5}}{6}$

Solve each equation.

$$31) \sqrt{11b+3} = 5$$

{2}

$$33) -5 + \sqrt{m+7} = -2$$

{2}