

Radical Review

Simplify.

1) $2\sqrt{210x}$

2) $8\sqrt{27x^4y}$

3) $10\sqrt{36uv^2}$

4) $4\sqrt{600u^3v}$

5) $3\sqrt{54m^4n^5}$

6) $-9\sqrt{28xy^4}$

7) $2\sqrt{24} - \sqrt{8} - \sqrt{54}$

8) $-3\sqrt{54} - 2\sqrt{6} - 3\sqrt{18}$

$$9) -3\sqrt{5} - \sqrt{20} - \sqrt{6}$$

$$10) 3\sqrt{5} - 3\sqrt{45} + 2\sqrt{3}$$

$$11) 3\sqrt{45} - 2\sqrt{18} + 3\sqrt{18}$$

$$12) -3\sqrt{18} - \sqrt{2} + 3\sqrt{2}$$

$$13) \sqrt{15}(\sqrt{5} + \sqrt{3})$$

$$14) \sqrt{15}(4 + 3\sqrt{5})$$

$$15) \sqrt{5}(3 + \sqrt{5})$$

$$16) \sqrt{2}(5\sqrt{2} + 5)$$

$$17) 2\sqrt{5}(4\sqrt{2} - 4\sqrt{10})$$

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

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

$$20) (\sqrt{5} + 5\sqrt{2})(\sqrt{5} + \sqrt{2})$$

$$21) (-4\sqrt{3} + \sqrt{2})(\sqrt{3} + \sqrt{2})$$

$$22) (2\sqrt{5} + \sqrt{2})(\sqrt{5} + \sqrt{2})$$

$$23) \frac{3}{\sqrt{3} + 2\sqrt{2}}$$

$$24) \frac{3}{4 + 2\sqrt{3}}$$

$$25) \frac{5}{2\sqrt{3} + 5\sqrt{2}}$$

$$26) \frac{5}{\sqrt{5} + 4\sqrt{3}}$$

$$27) \frac{\sqrt{5} + 5}{4 - 3\sqrt{5}}$$

$$28) \frac{\sqrt{5} + \sqrt{3}}{5\sqrt{2} + \sqrt{5}}$$

$$29) \frac{\sqrt{5} - \sqrt{2}}{3 - \sqrt{3}}$$

$$30) \frac{\sqrt{2} - 5\sqrt{5}}{5\sqrt{3} + \sqrt{2}}$$

Solve each equation. Remember to check for extraneous solutions.

$$31) 8 = \sqrt{n-7} - 2$$

$$32) \sqrt{\frac{n}{4}} = 3$$

$$33) -8\sqrt{18a} = -48$$

$$34) \sqrt{3x+25} = 2$$

$$35) -3 = -9 + \sqrt{8-4r}$$

$$36) -10\sqrt{2b+21} = -30$$

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Date _____

Simplify.

1) $2\sqrt{210x}$

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2) $8\sqrt{27x^4y}$

$24x^2\sqrt{3y}$

3) $10\sqrt{36uv^2}$

$60v\sqrt{u}$

4) $4\sqrt{600u^3v}$

$40u\sqrt{6uv}$

5) $3\sqrt{54m^4n^5}$

$9m^2n^2\sqrt{6n}$

6) $-9\sqrt{28xy^4}$

$-18y^2\sqrt{7x}$

7) $2\sqrt{24} - \sqrt{8} - \sqrt{54}$

$\sqrt{6} - 2\sqrt{2}$

8) $-3\sqrt{54} - 2\sqrt{6} - 3\sqrt{18}$

$-11\sqrt{6} - 9\sqrt{2}$

$$9) -3\sqrt{5} - \sqrt{20} - \sqrt{6}$$
$$-5\sqrt{5} - \sqrt{6}$$

$$10) 3\sqrt{5} - 3\sqrt{45} + 2\sqrt{3}$$
$$-6\sqrt{5} + 2\sqrt{3}$$

$$11) 3\sqrt{45} - 2\sqrt{18} + 3\sqrt{18}$$
$$9\sqrt{5} + 3\sqrt{2}$$

$$12) -3\sqrt{18} - \sqrt{2} + 3\sqrt{2}$$
$$-7\sqrt{2}$$

$$13) \sqrt{15}(\sqrt{5} + \sqrt{3})$$
$$5\sqrt{3} + 3\sqrt{5}$$

$$14) \sqrt{15}(4 + 3\sqrt{5})$$
$$4\sqrt{15} + 15\sqrt{3}$$

$$15) \sqrt{5}(3 + \sqrt{5})$$
$$3\sqrt{5} + 5$$

$$16) \sqrt{2}(5\sqrt{2} + 5)$$
$$10 + 5\sqrt{2}$$

$$17) 2\sqrt{5}(4\sqrt{2} - 4\sqrt{10})$$
$$8\sqrt{10} - 40\sqrt{2}$$

$$18) (-\sqrt{5} + \sqrt{2})(-5\sqrt{5} + \sqrt{2})$$
$$27 - 6\sqrt{10}$$

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

$$9 - 5\sqrt{15}$$

$$20) (\sqrt{5} + 5\sqrt{2})(\sqrt{5} + \sqrt{2})$$

$$15 + 6\sqrt{10}$$

$$21) (-4\sqrt{3} + \sqrt{2})(\sqrt{3} + \sqrt{2})$$

$$-10 - 3\sqrt{6}$$

$$22) (2\sqrt{5} + \sqrt{2})(\sqrt{5} + \sqrt{2})$$

$$12 + 3\sqrt{10}$$

$$23) \frac{3}{\sqrt{3} + 2\sqrt{2}}$$

$$\frac{-3\sqrt{3} + 6\sqrt{2}}{5}$$

$$24) \frac{3}{4 + 2\sqrt{3}}$$

$$\frac{6 - 3\sqrt{3}}{2}$$

$$25) \frac{5}{2\sqrt{3} + 5\sqrt{2}}$$

$$\frac{-10\sqrt{3} + 25\sqrt{2}}{38}$$

$$26) \frac{5}{\sqrt{5} + 4\sqrt{3}}$$

$$\frac{-5\sqrt{5} + 20\sqrt{3}}{43}$$

$$27) \frac{\sqrt{5} + 5}{4 - 3\sqrt{5}}$$

$$\frac{-19\sqrt{5} - 35}{29}$$

$$28) \frac{\sqrt{5} + \sqrt{3}}{5\sqrt{2} + \sqrt{5}}$$

$$\frac{5\sqrt{10} - 5 + 5\sqrt{6} - \sqrt{15}}{45}$$

$$29) \frac{\sqrt{5} - \sqrt{2}}{3 - \sqrt{3}}$$

$$\frac{3\sqrt{5} + \sqrt{15} - 3\sqrt{2} - \sqrt{6}}{6}$$

$$30) \frac{\sqrt{2} - 5\sqrt{5}}{5\sqrt{3} + \sqrt{2}}$$

$$\frac{5\sqrt{6} - 2 - 25\sqrt{15} + 5\sqrt{10}}{73}$$

Solve each equation. Remember to check for extraneous solutions.

$$31) 8 = \sqrt{n-7} - 2$$

$$\{107\}$$

$$32) \sqrt{\frac{n}{4}} = 3$$

$$\{36\}$$

$$33) -8\sqrt{18a} = -48$$

$$\{2\}$$

$$34) \sqrt{3x+25} = 2$$

$$\{-7\}$$

$$35) -3 = -9 + \sqrt{8-4r}$$

$$\{-7\}$$

$$36) -10\sqrt{2b+21} = -30$$

$$\{-6\}$$