

Beginning College Algebra

Evaluating radicals.

Perform the operations indicated.

1) $2\sqrt{6} + 3\sqrt{6} + \sqrt{24} - 2\sqrt{54}$.

Solution: $2\sqrt{6} + 3\sqrt{6} + 2\sqrt{6} - 6\sqrt{6} = \sqrt{6}$

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

3) $\sqrt{24} + \sqrt{54} - \sqrt{96}$

4) $\sqrt{48xy^2} + y\sqrt{75x} + \sqrt{3x(x-9y)^2}$

5) $\sqrt{3} + \sqrt{27} + 3\sqrt{27} - \sqrt{75} + \sqrt[4]{9}$

6) $\sqrt{128} - 2\sqrt{50} + \sqrt{72} - \sqrt{18}$

7) $b\sqrt{a} + x\sqrt{a} - y\sqrt{a^3}$

8) $\sqrt{\frac{1}{2}} + \sqrt{\frac{2}{3}} - \sqrt{\frac{9}{2}}$

9) $2\sqrt{\frac{5}{3}} + \frac{1}{6}\sqrt{60} + \sqrt{15} + \sqrt{\frac{3}{5}}$

10) $20(3)^{\frac{1}{2}} - 4(3)^{\frac{1}{2}}$

11) $(248)^{\frac{1}{2}} + (27)^{\frac{1}{2}} + (48)^{\frac{1}{2}} - (3)^{\frac{1}{2}}$

12) $(405)^{\frac{1}{2}} - (180)^{\frac{1}{2}}$

13) $(135)^{\frac{1}{3}} - (40)^{\frac{1}{3}}$

Evaluating radicals - solutions

2) $3\sqrt{3}$

3) $\sqrt{24} + \sqrt{54} - \sqrt{96} = 2\sqrt{6} + 3\sqrt{6} - 4\sqrt{6} = \sqrt{6}$

4) $x\sqrt{x}$

5) $9\sqrt{3}$

6) $\sqrt{2}$

7) $(b + x - ay)\sqrt{a}$

8) $\frac{1}{3}\sqrt{6} - \sqrt{2}$

9) $\frac{11}{5}\sqrt{15}$

10) $20(3)^{\frac{1}{2}} - 4(3)^{\frac{1}{2}} = (20 - 4)(3)^{\frac{1}{2}} = 16(3)^{\frac{1}{2}}$

11) $15(3)^{\frac{1}{2}}$

12) $3(5)^{\frac{1}{2}}$

13) $5^{\frac{1}{3}}$