

EXERCISE A

Simplify.

1) $\sqrt{3} - 2\sqrt[4]{3} + 4\sqrt{3} + 5\sqrt[4]{3}$

2) $3\sqrt[3]{128} + 5\sqrt[3]{16}$

3) $\sqrt{75} + \sqrt{48} + \sqrt{12}$

4) $-2\sqrt[3]{27} + \sqrt[3]{88}$

5) $\sqrt{20} - 7\sqrt{45} + \sqrt{500}$

6) $\sqrt{49} + \sqrt[3]{16} + \sqrt[3]{54} - \sqrt[3]{125}$

Simplify (mixed review).

7) $\sqrt{200g^2}$

8) $(5\sqrt{12})(2\sqrt{18})$

9) $\frac{\sqrt[3]{80}}{\sqrt[3]{10}}$

10) $(2 + \sqrt{6})^2$

11) $3(1 - 3\sqrt{13})$

12) $\frac{1}{\sqrt{7}}$

13) $\frac{12}{\sqrt{5} - 4}$

EXERCISE B

Simplify.

14) $\sqrt{12} + \sqrt{48} - \sqrt{27}$

15) $\sqrt{3} + \sqrt{72} - \sqrt{128} + \sqrt{108}$

16) $-2\sqrt[3]{128} + 8\sqrt[3]{16}$

17) $\sqrt{50} - \sqrt[3]{250} + \sqrt{98}$

18) $-2\sqrt[3]{27} + 4\sqrt{28} - 3\sqrt{64}$

19) $3(6 + \sqrt{24}) + \sqrt{54}$

Simplify (mixed review).

20) $\sqrt{33a^4b^7}$

21) $(4\sqrt{3a})(3\sqrt{12a})$

22) $\sqrt[3]{\frac{w^4}{125}}$

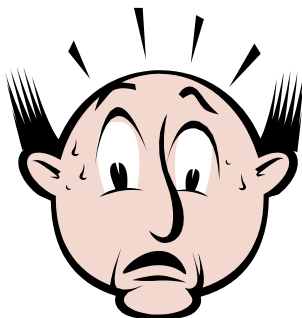
23) $(\sqrt{2} - \sqrt{5})^2$

24) $\frac{2}{\sqrt[3]{16}}$

25) $\frac{2+\sqrt{11}}{2-\sqrt{11}}$

26) $-12\sqrt[4]{32}$

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

EXERCISE C

28) The velocity v in feet per second of a roller coaster at the bottom of a hill is related to the vertical drop h in feet and the velocity v_0 in feet per second of the coaster at the top of the hill by the formula:

$$v_0 = \sqrt{v^2 - 64h}$$

What velocity must a coaster have at the top of a 225-foot hill to achieve a velocity of 120 feet per second at the bottom?

ANSWERS:

1) $5\sqrt{3} + 3\sqrt[4]{3}$

9) 2

17) $12\sqrt{2} - 5\sqrt[3]{2}$

25) $\frac{15+4\sqrt{11}}{-7}$

3) $11\sqrt{3}$

11) $3-9\sqrt{13}$

19) $18+9\sqrt{6}$

27) -6

5) $-9\sqrt{5}$

13) $\frac{12\sqrt{5}+48}{-11}$

21) $72|a|$

7) $10g\sqrt{2}$

15) $7\sqrt{3}-2\sqrt{2}$

23) $7-2\sqrt{10}$