

# EXERCISE SET 8.2



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Use the product rule to simplify each radical. See Example 1.

1.  $\sqrt{20}$
2.  $\sqrt{44}$
3.  $\sqrt{18}$
4.  $\sqrt{45}$
5.  $\sqrt{50}$
6.  $\sqrt{28}$
7.  $\sqrt{33}$
8.  $\sqrt{98}$
9.  $\sqrt{60}$
10.  $\sqrt{90}$
11.  $\sqrt{180}$
12.  $\sqrt{150}$
13.  $\sqrt{52}$
14.  $\sqrt{75}$

25.  $-\sqrt{\frac{27}{144}}$

26.  $-\sqrt{\frac{84}{121}}$

Simplify each radical. Assume that all variables represent positive numbers. See Example 3.

27.  $\sqrt{x^7}$
28.  $\sqrt{y^3}$
29.  $\sqrt{x^{13}}$
30.  $\sqrt{y^{17}}$
31.  $\sqrt{75x^2}$
32.  $\sqrt{72y^2}$
33.  $\sqrt{96x^4}$
34.  $\sqrt{40y^{10}}$

Use the quotient rule and the product rule to simplify each radical. See Example 2.

15.  $\sqrt{\frac{8}{25}}$
16.  $\sqrt{\frac{63}{16}}$
17.  $\sqrt{\frac{27}{121}}$
18.  $\sqrt{\frac{24}{169}}$
19.  $\sqrt{\frac{9}{4}}$
20.  $\sqrt{\frac{100}{49}}$
21.  $\sqrt{\frac{125}{9}}$
22.  $\sqrt{\frac{27}{100}}$
23.  $\sqrt{\frac{11}{36}}$
24.  $\sqrt{\frac{30}{49}}$

35.  $\sqrt{\frac{12}{y^2}}$

36.  $\sqrt{\frac{63}{x^4}}$

37.  $\sqrt{\frac{9x}{y^2}}$

38.  $\sqrt{\frac{6y^2}{x^4}}$

39.  $\sqrt{\frac{88}{x^4}}$

40.  $\sqrt{\frac{x^{11}}{81}}$

Simplify each radical. See Example 4.

41.  $\sqrt[3]{24}$
42.  $\sqrt[3]{81}$
43.  $\sqrt[3]{250}$
44.  $\sqrt[3]{40}$
45.  $\sqrt[3]{\frac{5}{64}}$
46.  $\sqrt[3]{\frac{32}{125}}$

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