Simplify the expression involving rational exponents.
1) $8^{4/3}$
2) $\left(\frac{25}{36}\right)^{1/2}$
3) $(-125)^{1/3}$

Write with radicals. Assume that all variables represent positive real numbers.
4) $m^{8/3}$
5) $(x^2y^2)^{1/9}$

Simplify by first converting to rational exponents. Assume that all variables represent positive real numbers.
6) $\sqrt[3]{x^{21}}$
7) $\sqrt[18]{100s^18}$

Use the rules of exponents to simplify the expression. Write the answer with positive exponents. Assume that all variables represent positive real numbers.
8) $\frac{y^{9/8}}{y^{5/8}}$
9) $z^{-2.5} \cdot z^{3/5}$
10) $\left(\frac{x^3}{y^{-6}}\right)^{1/3}$
Express the radical in simplified form.

11) \(\sqrt{180}\)  

12) \(- \frac{4}{\sqrt{80}}\)

Express the radical in simplified form. Assume that all variables represent positive real numbers.

13) \(\sqrt{18k^2q^8}\)

Simplify. Assume that all variables represent positive real numbers.

14) \(-9\sqrt{3} - 5\sqrt{12}\)

15) \(5\sqrt{80x^2} - 2\sqrt{45x^2} - \sqrt{5x^2}\)

Find the product and simplify, if possible.

16) \(\sqrt{50} \cdot \sqrt{72}\)

Perform the indicated operation.

17) \(6\sqrt{3}(\sqrt{11} + \sqrt{3})\)

18) \((2 - 3\sqrt{2})^2\)

Rationalize the denominator. Assume that all variables represent positive real numbers.

19) \(\sqrt{\frac{81}{5}}\)

Rationalize the denominator. Assume that all variables represent positive real numbers and that the denominator is not zero.

20) \(\frac{7}{9 - \sqrt{6}}\)