

Chapter 7

1. Simplify each. Use absolute value symbols when necessary. a) $\sqrt[4]{162c^6d^8e^{13}}$ b) $\sqrt[3]{m^{12}p^{15}r^{22}}$

For 2 and 3, assume all variables are positive.

2. Simplify each. a) $\sqrt{15E^3F} \cdot \sqrt{3E^7F^8}$ b) $\frac{\sqrt{48a^9b^2}}{\sqrt{2ab^7}}$
3. Rationalize the denominator. a) $\frac{5}{\sqrt[3]{7c^{13}d^8}}$ b) $\frac{12k^2}{\sqrt[4]{9j^5k^2}}$ c) $\frac{8}{5 + \sqrt{3}}$

4. Write in radical form. a) $E^{\frac{1}{4}}$ b) $Q^{\frac{2}{3}}$

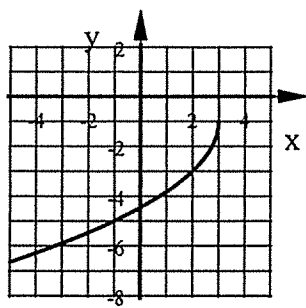
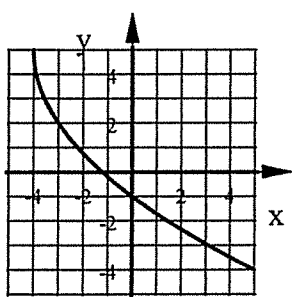
5. Write in exponential form. a) $\sqrt[3]{5a^3}$ b) $\sqrt{w^9}$

6. Solve each. a) $2\sqrt{3x+40} + 5x = 7x$ b) $\sqrt{x+11} + 1 = x$ c) $3(2x-5)^{\frac{3}{2}} + 37 = 61$

7. Simplify. $4\sqrt{50} + 3\sqrt{72} - \sqrt{45}$ 8. Simplify a) $(4 + \sqrt{3})(5 - 2\sqrt{3})$ b) $(7 - 2\sqrt{5})(7 + 2\sqrt{5})$

9. Write the equation of each square root function:

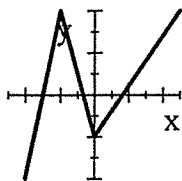
a) b)



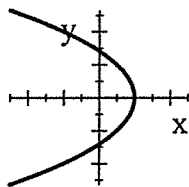
10. Write the equation of the inverse relation for each function.

a) $f(x) = \frac{2x^3 - 3}{5}$ b) $y = -4x - 7$ c) $y = 4 \cdot \sqrt{5x + 8} - 9$ d) $y = 10\left(\frac{x+8}{7}\right)^5$

11. Tell if the inverse relation of each is a function or not.



a)



b)

Chapter 7

1. a) $3d^2|c||e^3|\sqrt[4]{2c^2e}$ b) $m^2p^3r^4\sqrt[5]{m^2r^2}$

2. a) $3E^5F^4\sqrt{5F}$ b) $\frac{2a^4\sqrt{6}}{b^2\sqrt{b}} = \frac{2a^4\sqrt{6b}}{b^3}$

3. a) $\frac{5\sqrt[3]{49c^2d}}{7c^5d^3}$ b) $\frac{4k\sqrt[4]{9j^3k^2}}{j^2}$ c) $\frac{4(5-\sqrt{3})}{11}$ or $\frac{20-4\sqrt{3}}{11}$

4. a) $\sqrt[4]{E}$ b) $\sqrt[3]{Q^2}$ or $(\sqrt[3]{Q})^2$ 5. a) $(5a^3)^{\frac{1}{7}}$ or $5^{\frac{1}{7}}a^{\frac{3}{7}}$ b) $w^{\frac{9}{2}}$

6. a) $x = 8$ b) $x = 5$ c) $x = 4.5$

7. $38\sqrt{2} - 3\sqrt{5}$ 8. a) $14 - 3\sqrt{3}$ b) 29

9. a) $-3\sqrt{x+4} + 5$ b) $-2\sqrt{-(x-3)} - 1$

10. a) $f^{-1}(x) = \sqrt[3]{\frac{5x+3}{2}}$ b) $f^{-1}(x) = \frac{x+7}{-4}$ c) $f^{-1}(x) = \frac{\left(\frac{x+9}{4}\right)^2 - 8}{5}$ d) $f^{-1}(x) = 7 \cdot \sqrt[5]{\frac{x}{10}} - 8$

11. a) No a) Yes