Algebra 2 Final Exam Review Spring 2014

Chapter 7

1. Simplify each. Use absolute value symbols when necessary. a) $\sqrt[4]{c^6d^8e^{13}}$ b) $\sqrt[5]{m^{12}p^{15}r^{22}}$

For 2 and 3, assume all variables are positive.

2. Simplify each. a) $\sqrt{15E^3F} \bullet \sqrt{3E^7F^8}$ b) $\dfrac{\sqrt{48a^9b^2}}{\sqrt{2ab^7}}$

3. Rationalize the denominator. a) $\dfrac{5}{\sqrt[3]{7c^{13}d^8}}$ b) $\dfrac{8}{5+\sqrt{2}}$

4. Write in radical form. a) $E^{\frac{1}{4}}$ b) $Q^{\frac{7}{3}}$

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

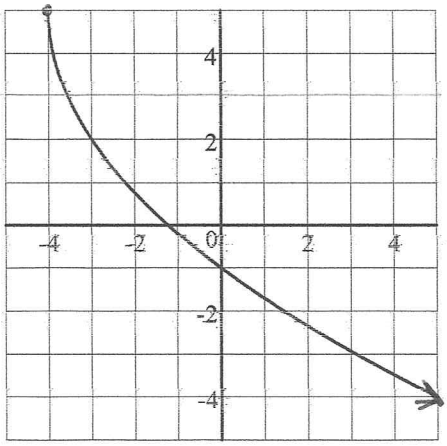
6. Solve each. a) $2\sqrt{3x+40}+5x=7x$ b) $\sqrt{x+11}+1=x$

7. Simplify. $4\sqrt{50}+3\sqrt{72}-\sqrt{45}$

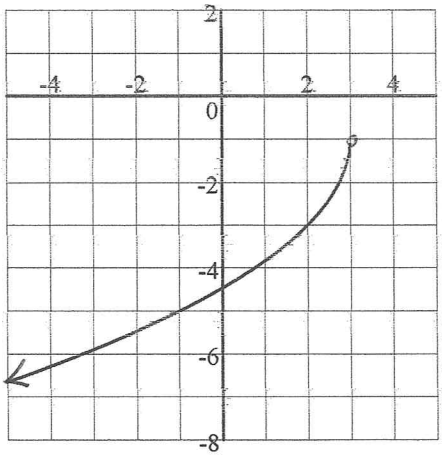
8. Simplify $(4+\sqrt{3})(5-2\sqrt{3})$

9. Write the equation of each square root function:

a)



b)

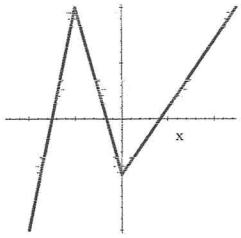


10. Write the equation of the inverse relation for each function.

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

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

a)



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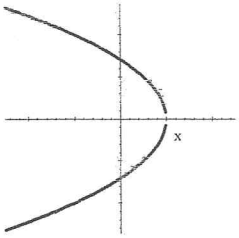


Chapter 8

1. Tell if each exponential equation represents growth or decay.

a) $y = 325(0.99985)^x$ b) $y = 0.32(1.0016)^x$ c) $y = 475(\frac{23}{24})^x$ d) $y = 7(1.99)^x$

2. Use the given exponential equation to find the % change and whether it represents an increase or a decrease.

a) $y = 150(0.832)^x$ b) $y = 50{,}000(1.0334)^x$

3. Take the given % change and write the base that would be used in an exponential equation.

a) 57% increase b) 0.56% increase c) 1.04% decrease d) 43% decrease

4. The value of an old coin has been increasing 4% each year. In 2000 the coin was worth $4,000.

a) Find the value of the coin in 1995.
b) Find the value of the coin in 2007.
c) When will the coin be worth $10,000? Round to the nearest hundredth.

5. The value of a house in 2001 was $250,000 and has been decreasing 8.4% each year.

a) Find the value of the house in 1998.
b) Find the value of the house in 2006.
c) When will the value of the house be $100,000? Round to the nearest hundredth.

6. Write each in logarithmic form.

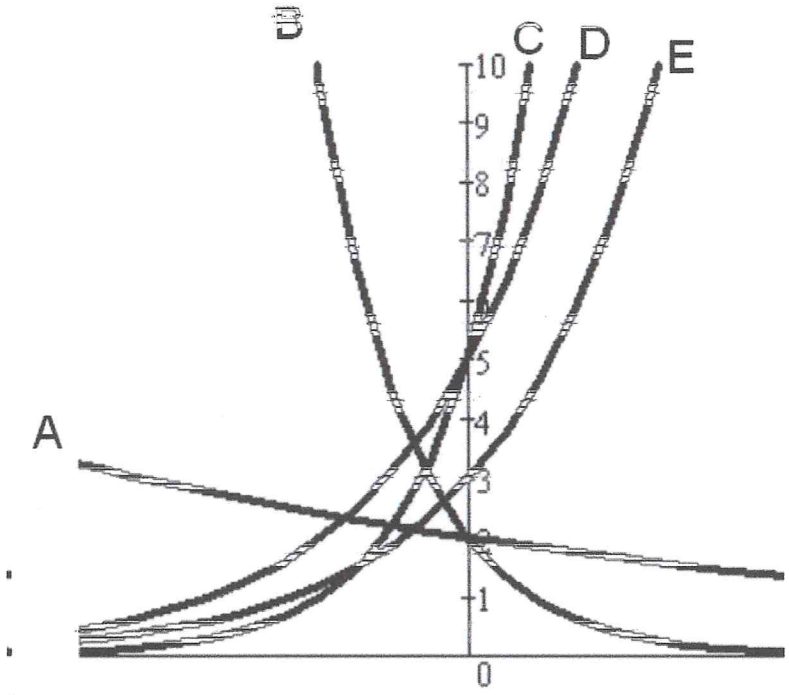
a) $5^3 = x$ b) $x^7 = 72$ c) $4^x = 100$ d) $e^5 = x$ e) $10^x = 211$

7. Write each in exponential form.

a) $\log_3 x = 20$ b) $\log 478 = x$ c) $\ln x = 50$ d) $\log_x 8 = 3$

8. Match each equation with its graph.

a. $y = 5(3)^x$ b. $y = 2(0.15)^x$ c. $y = 5(7)^x$ d. $y = 2(0.8)^x$ e. $y = 3(3)^x$



Solve each equation. Round decimal answers to the nearest thousandth.

10. $7^x = 56$ 11. $5 \cdot 3^{x-7} + 10 = 32$ 12. $\log_4(x) = 3$

13. $\log_2(5x - 2) = 4$ 14. $\log_8 X + \log_8(X - 12) = 2$