Algebra 2 Final Exam Review Chapter 8 Spring 2019

Round to the nearest hundredth unless otherwise noted.

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 it represents.

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

3. Take the given % change and write the base (b) 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) In how many years will the coin be worth $10,000?

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) In how many years will the house be worth 100,000?

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) $\log_x 8 = 3$

9. Evaluate each. Round decimal answers to the nearest thousandth.

a) $\log 64$ b) $\log_7 80$

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

12. $8^{2x} = 56$ 13. $\log_x 81 = 2$ 14. $\log_4 x = 3$ 15. $\log_2(5x - 2) = 4$

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1. a) Decay b) Growth c) Decay d) Growth

2. a) 16.8% decrease b) 3.34% increase

3. a) $b = 1.57$ b) $b = 1.0056$ c) $b = 0.9896$ d) $b = 0.57$

4. EQ: $y = 4000(1.04)^x$ a) $3287.71 b) $5263.73 c) 23.36 yrs

5. EQ: $y = 250,000(.916)^x$ a) $325,277.17 b) $161,219.43 c) 10.44 yrs

6. a) $\log_5 x = 3$ b) $\log_x 72 = 7$ c) $\log_4 100 = x$ d) $\ln x = 5$ e) $\log 211 = x$

7. a) $3^{20} = x$ b) $10^x = 478$ c) $x^3 = 8$ 9. a) 1.81 b) 2.26

12. $x = 0.968$ 13. $x = 9$ 14. $x = 64$ 15. $x = 3.6$