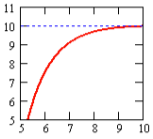
7.1 Corrective Assignment – Exponential Functions Name: _____ ID: 1

PreCalc Date:_____ Period:_____

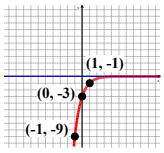
Tell whether the equation or graph represents an exponential growth or exponential decay function.

1) $y = 5(0.4)^x$

2) $y = -3\left(\frac{7}{2}\right)^x$

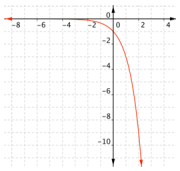
3) 

4) $y = 9(1.5)^x$

5) 

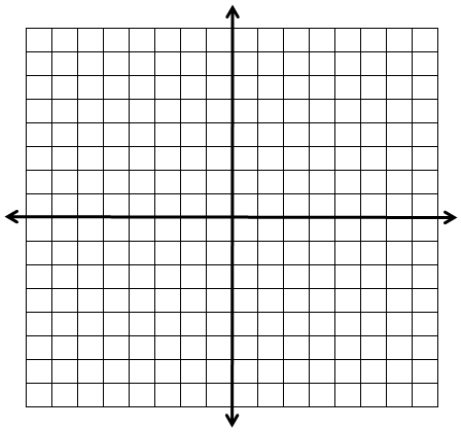
6) $y = 0.2(0.3)^{-x}$

7) $y = -3(6)^x$

8) 

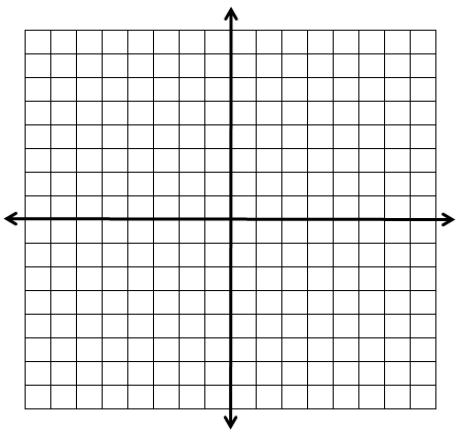
Sketch the graph of each exponential function by doing the following: Sketch the asymptote, label at least **three distinct coordinate points** on each graph, and write the domain and range of each function.

9. $y = 4\left(\frac{1}{2}\right)^x$



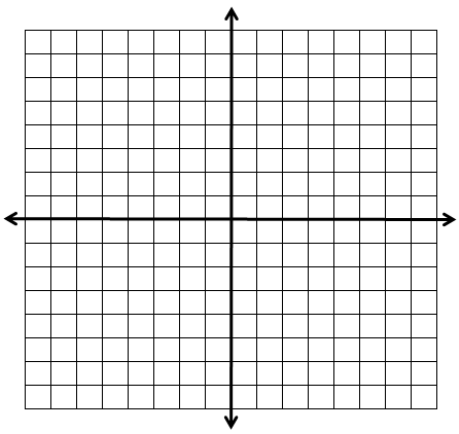
Domain: Range:

10. $y = -3\left(\frac{1}{3}\right)^x$



Domain: Range:

11. $y = -2\left(\frac{1}{5}\right)^{x+2} + 3$



Domain: Range:

Give the **percent *increase*** or **percent *decrease*** for each equation.

12) $y = 5(3.1)^x$

13) $y = 0.25(1.029)^x$

14) $y = 1.9(0.893)^x$

15) $y = 36(6.2)^x$

Solve each equation for the unknown variable.

16. $64^{3x} = 4$

17. $64^{1-n} = 16^{-n}$

18. $16^{n+2} = \left(\frac{1}{4}\right)^{3n}$

19. $\left(\frac{1}{25}\right)^{3b} \cdot 625^{3b} = 1$

For 16 – 19, write a model for each scenario and use the model to calculate the balance for the given number of years. (Not all problems involve *continuous* compounding…some are periodic!)

20. You deposit $500 in an account that pays 8% annual interest compounded monthly. How much will you have after 15 years?

21. You deposit $575 in an account that pays 4% annual interest compounded continuously. How much will you have after 5 years?

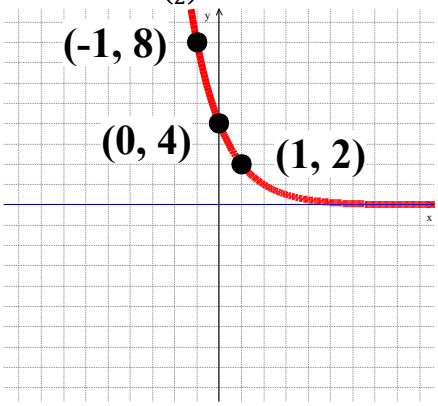
9.1 Corrective Assignment – Exponential Decay ANSWER KEY ID: 1
PreCalc

Answer Key to 7.1 CA – Exponential Functions

1) Decay 2) Growth 3) Decay 4) Growth

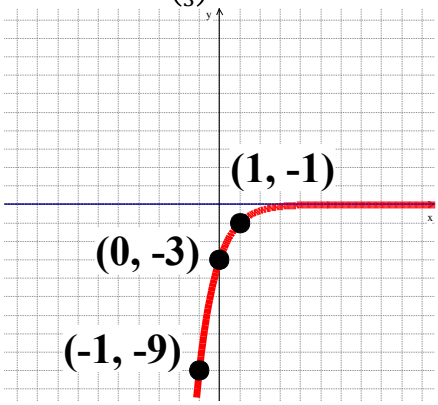
5) Decay 6) Growth 7) Growth 8) Growth

9. $y = 4\left(\frac{1}{2}\right)^x$



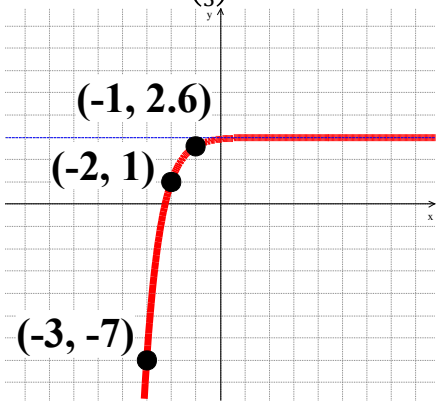
Domain: All real numbers Range: $y > 0$

10. $y = -3\left(\frac{1}{3}\right)^x$



Domain: All real numbers. Range: $y < 0$

11. $y = -2\left(\frac{1}{5}\right)^{x+2} + 3$



Domain: All real numbers. Range: $y < 3$

12) 210% increase 13) 2.9% increase 14) 10.7% decrease 15) 520% increase

16) x = $\frac{1}{9}$ 17) n = 3 18) n = $-\frac{4}{5}$ 19) b = 0

20) $A(t) = 500\left(1 + \frac{.08}{12}\right)^{12t}$
$A(15) = \$1{,}653.46$

21) $A(t) = 575e^{0.04t}$
$A(5) = \$702.31$