

Algebra 2 CP Mid-Chapter 8 PRACTICE

1. **CALCULATOR** If \$3750 is invested at an interest rate of 3.85% per year, find the amount of the investment at the end of 2 years for the following compounding methods:

$A(t) = P\left(1 + \frac{r}{n}\right)^{n \cdot t}$

$n=1$ a) annually

$n=2$ b) semiannually

$n=4$ c) quarterly

d) continuously $A(t) = Pe^{rt}$

2. **CALCULATOR** The length l (in centimeters) of a tiger shark can be modeled by the function $l = 337 - 276e^{-0.178t}$ where t is the shark's age (in years). What is the length of a tiger shark that is 5 years old? Round to the nearest whole number.

$337 - 276e^{-0.178t}$

3. **CALCULATOR** Since 1980 the population of the city of Brownville has grown according to the mathematical model

$y = 720,500(1.022)^x$, where x is the number of years since 1980.

initial amount

a.) Explain what the numbers 720,500 and 1.022 represent in this model.

growth factor

b.) What would the population be in 2017 if the growth continues at the same rate?

$x = 37$

4. **CALCULATOR** Your new computer costs \$1500 but it depreciates in value by about 18% each year.

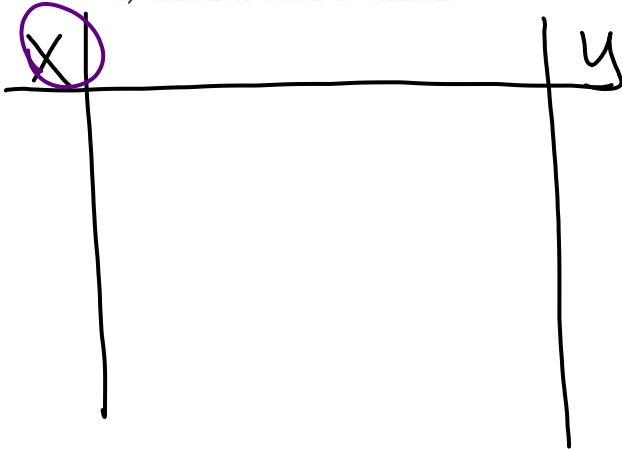
a.) Write an equation that would indicate the value of the computer after x years.

$A(t) = 1500(1 - 0.18)^x$

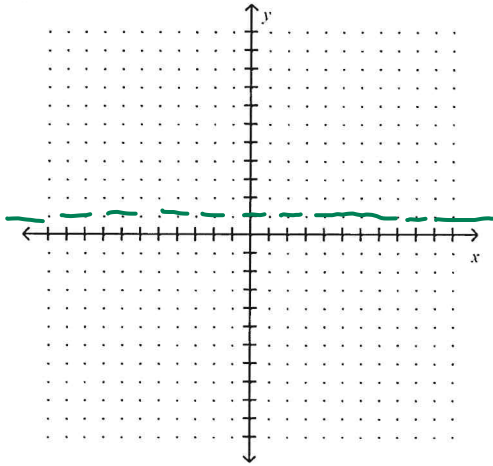
b.) How much will your computer be worth after 6 years?

Algebra 2 CP Mid-Chapter 8 Practice Test

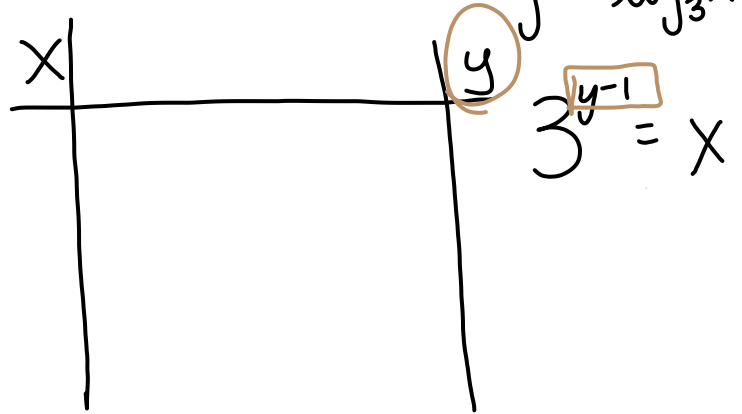
$x-3 = -2$ $x-3 = -1$ $x-3 = 0$ $x-3 = 1$
 5. For the function $y = 2^{x-3} + 1$:
 a) Make a table of values.



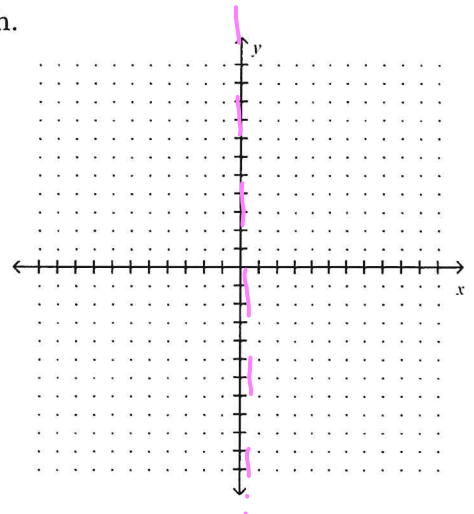
b) Graph.



$y-1 = -2$ $y-1 = -1$ $y-1 = 0$ $y-1 = 1$
 6. For the function $y = \log_3 x + 1$:
 a) Make a table of values.



b) Graph.



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7. Solve for x .

a) $\log_3 \frac{1}{81} = x$

$3^x = \frac{1}{81}$ $x = -4$ $\log_b y = x$

b) $\log_x 4 = \frac{1}{3}$



c) $\log_{36} x = \frac{1}{2}$

d) $\log_x 1000 = 3$

$x^3 = 1000$ $x = 10$ $b^x = y$

e) $\log_7 343 = x$

f) $\log_5 x = 3$

g) $\log_7 \frac{1}{49} = x$

h) $\log_{500} 500 = x$