

Exponential Functions

Objective: SWBAT Solve for missing values in Exponential Equations

Language Objective: SWBAT identify the missing value with a partner by reading the problems and writing the solution onto a their answer slip.

Agenda

- 1) Do Now - Sketch & Solve
- 2) Solving for missing values
 #1 - Worksheet #5
- 3) Partner Points
 - Worksheet 5

HW: Work on Project! - Get to a Bank!
NOT all banks are open on the weekend!

Do Now:

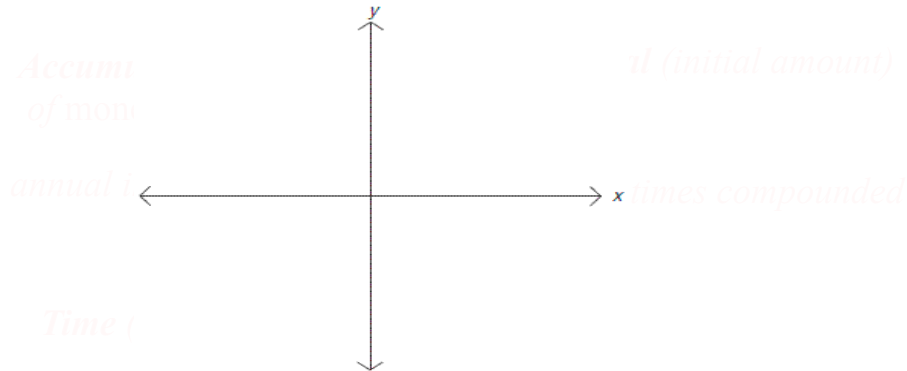
1) a) Sketch each function below. Indicate the y-intercept.

$$y = 2^x$$

$$y = 5^x$$

$$y = (1/2)^x$$

$$y = 3^{-x}$$



b) For all the functions above, state:

Domain _____ Range _____ Asymptote _____

1. Solve each for the given variable (round to 2nd decimal):

a. $2000 = 100 * \left(1 + \frac{r}{365}\right)^{300}$

b. $1000 = 200 * b^{12}$

c. $500 = A * \left(1 + \frac{.035}{12}\right)^{12}$

d. $650 = 500 * \left(1 + \frac{.08}{12}\right)^x$

Partner Points

- 1) Sit next to your partner
- 2) A question will be put up on the board
- 3) You and your partner must:
 - write the problem on a sheet of paper
 - solve every part of the problem
 - turn in the slip to Ms. Paris
- 4) Each correct problem earns 1 point
- 5) The partners with the most points earn 2 points towards their project grade

WORKSHEET #5
Finding Values

Name _____

1. Solve each for the given variable (round to 2nd decimal):

a. $2000 = 100 * \left(1 + \frac{r}{365}\right)^{300}$

b. $1000 = 200 * b^{12}$

c. $500 = A * \left(1 + \frac{.035}{12}\right)^{12}$

d. $650 = 500 * \left(1 + \frac{.08}{12}\right)^x$

2. The current value of your car is \$6050 and the rate of depreciation is 17%.

a. What is the multiplier?

b. Find the value of the car in 3 years.

c. Find the value of the car in 5 years and 9 months.

d. If the car is already 4 years old, what was the value new?

3. An average price for a can of soda in 1988 was about 50 cents, if now the average price is \$1, then
- Find the rate of inflation per year.
 - Write the equation that models the increasing price of soda.
 - Suppose the price keeps increasing at this rate, what is the average price in 5 more years?
4. The number of students with the flu on Monday was 3. If by Friday the number infected counted is 75, then
- Find the multiplier per day.(round to 5th decimal if needed.)
 - Find the infection rate per day.(round to 2nd decimal)
 - Write the equation.
 - How many students were infected on Wednesday?
5. My computer 5 years ago was valued at \$2225, if now it is worth \$250,
- Find the multiplier
 - Find the equation that models this.
 - What is the rate of depreciation?
 - How much will it be in 5 more years?

6. A collector buys a painting for \$100,000 at the beginning of 1995 and sells it for \$150,000 at the beginning of 2000. What was the annual growth rate of the paintings value?
7. Find the rate of each situation:
- A \$1000 mutual fund investment made at the beginning of 1990 that is worth \$1450 in 2000
 - A house that is bought for \$75,000 at the end of 1995 that is worth \$95,000 at the end of 2005
 - A half gallon of milk cost \$1.37 in 1989 and \$1.48 in 1995
 - A gallon of regular unleaded gas cost \$ 0.93 in 1986 and \$1.11 in 1993.
8. Suppose the value of your cell phone model decreases at a rate of 5.5% each year. If you buy it on eBay for \$80 and the owner says they bought it 5 years ago, how much did they owner pay for it when they bought it new?
9. Your apartment rent is \$945 and increases 2% each year
- What will the rent be in 4 years?
 - What was the rent 3 years ago?