Warm-up 12/6

Practice

1. A population of 500 elk is released in a wildlife preserve. Each year, the population grows by 6.4%. Let x stand for the number of years since the release, and let y stand for the elk population.
   a. Write an exponential equation that relates x and y, using the given information.
   b. After 5 years, how many elk are there?
   c. How many years will it take for the elk population to exceed 800 elk?

2. A store receives a shipment of 1000 greeting cards. Each day, the store sells 2.5% of its stock of cards. Let x = # of days passed; $f(x)$ = # of cards remaining in the store.
   a. Write an exponential equation that relates x and $f(x)$, using the given information.
   b. After 15 days, how many cards will remain in the store?
   c. The store manager wants to order a new shipment when the inventory reaches 200 cards. After how many days will this happen?

Warm-up 12/6

$y = ab^x$

Practice

1. A population of 500 elk is released in a wildlife preserve. Each year, the population grows by 6.4%. Let x stand for the number of years since the release, and let y stand for the elk population. 6.4% = 0.064 $y = 500(1.064)^x$

   a. Write an exponential equation that relates x and y, using the given information.

   b. After 5 years, how many elk are there? $y = 500(1+0.064)^x$, $x = 5$ 681 elk

   c. How many years will it take for the elk population to exceed 800 elk?

   7 - 771 8 - 821 8 years

2. A store receives a shipment of 1000 greeting cards. Each day, the store sells 2.5% of its stock of cards. Let x = # of days passed; $f(x)$ = # of cards remaining in the store. 2.5% = 0.025

   a. Write an exponential equation that relates x and $f(x)$, using the given information. $f(x) = 1000(1-0.025)^x$

   b. After 15 days, how many cards will remain in the store? $f(15) = 1000(0.975)^{15}$ $f(15) = 684$ cards

   c. The store manager wants to order a new shipment when the inventory reaches 200 cards. After how many days will this happen? $f(x) = 1000(0.975)^x$

   64 - 197

   63 - 202

   (64 days)

$y = 30(2)^x$

21,000,000

26 - 2,013,265,920

20-31,457,280

19-15,728,640

30-3.221225472E10

$3.221225472 \times 10^{10}$

32,212,254,720

15-983040

17-3932160