

TASK 1.2.6: CAGE THE CATS**Solutions**

Cage the Cats



The Humane Society of Catsville has to make a yearly budget for new equipment. A necessary item for the organization is cages to isolate new felines. The cats are isolated in order to prevent the spread of diseases and parasites. They only have 23 usable cages at the present time. The manager predicts that the humane society will need 5 new cages each month. Describe the function that models this situation. Complete a data table for the information; write an algebraic expression, and draw a scatter plot for the situation. Be sure to label the axes of the graph. How many months will it take the humane society to collect 323 cages?

The number of cages depends on the usable cages at the current time plus adding five new cages each month.

OR

The number of cages depends on the number of months.

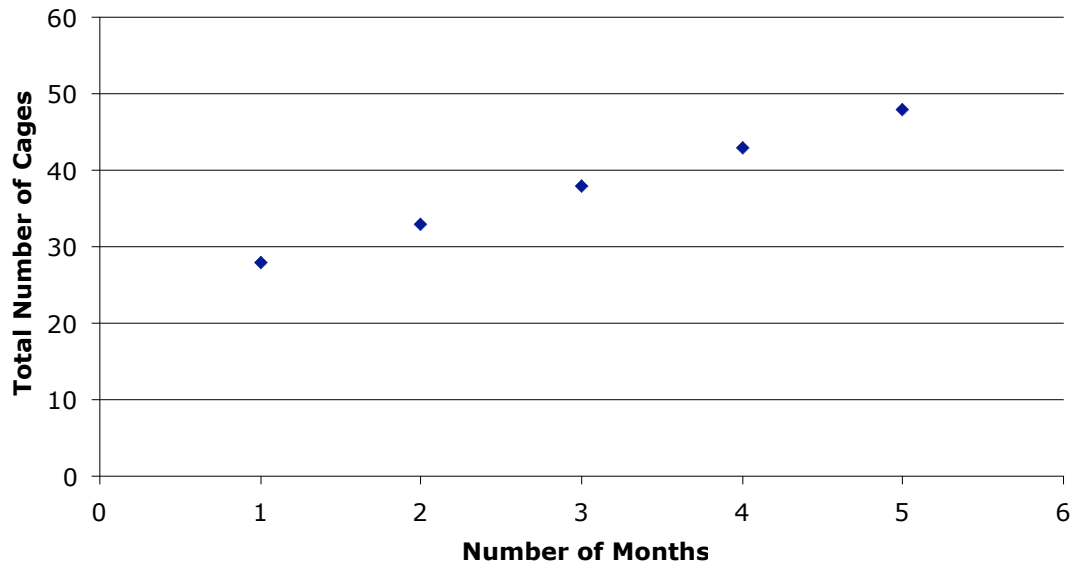
OR

Starting with 23 cages, the humane society will add 5 new cages each month.

Months	Process	Total Number of Cages
1	$23 + 5(1)$	28
2	$23 + 5(2)$	33
3		38
4		43
x	$23 + 5x$	

$$y = 23 + 5x$$

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$323 = 23 + 5x$

$x = 60$

It will take 60 months or 5 years to collect 323 cages.

Teaching notes

There are a variety of ways to describe the function relationship between the number of cages and the number of months. Data tables may vary; however, each should show the number of months as the independent variable and the number of cages as the dependent variable. Check to make sure the scatter plot has axes labeled correctly.

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