Name Period Date

Int2Acc | **Homework 3-3**
Writing Decrease and Decay Equations | **Unit 3**

Write an explicit equation to represent each pattern below. <u>Write your equation in two equivalent forms.</u>

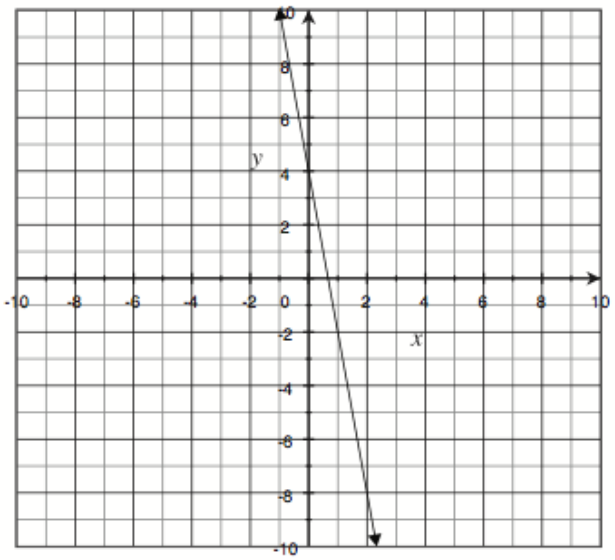
1. Hannah borrows $30 from her parents. Each week, she pays them back the same amount. The total amounts she owes her parents after weeks 0, 1, 2, 3, and 4 are $30, $25, $20, $15, and $10, respectively.

2. Angelo sells cookies in packages, where each package contains the same number of cookies. The total amounts of cookies he has after 1, 2, 3, 4, and 5 packages are sold are 110, 88, 66, 44, and 22, respectively.

3. As a treat, Nia eats a portion of a chocolate bar each day. She eats the same portion of the remaining bar each day. On day 0, the bar of chocolate starts with 32 pieces. After 1 day, 16 pieces remain. After days 2, 3, and 4, there are a total of 8, 4, and 2 pieces remaining.

Determine a linear or exponential equation that represents the relationship between *x* and *y* in each graph or table that follows. <u>Write your equation in two equivalent forms.</u>

4.



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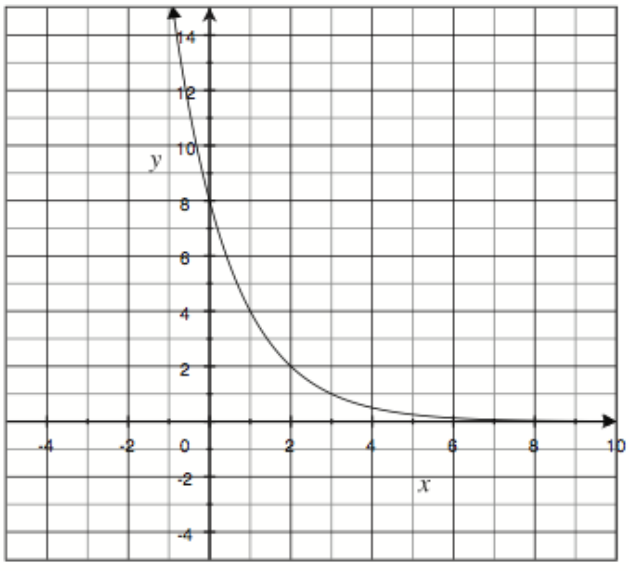

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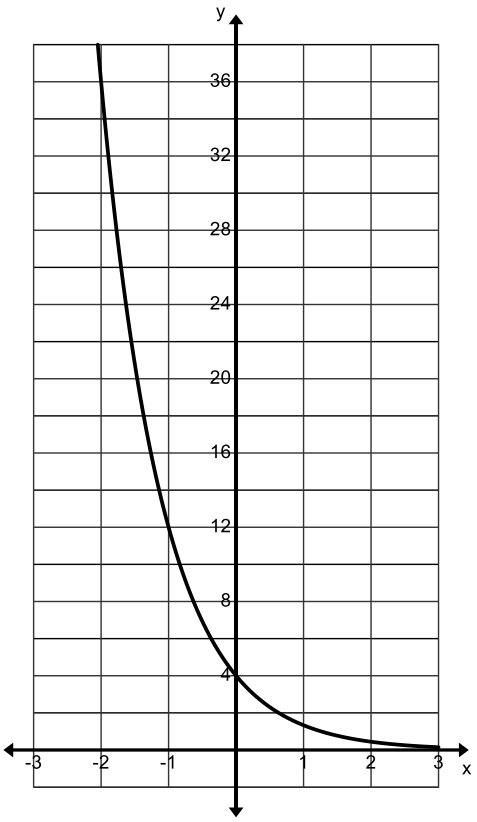

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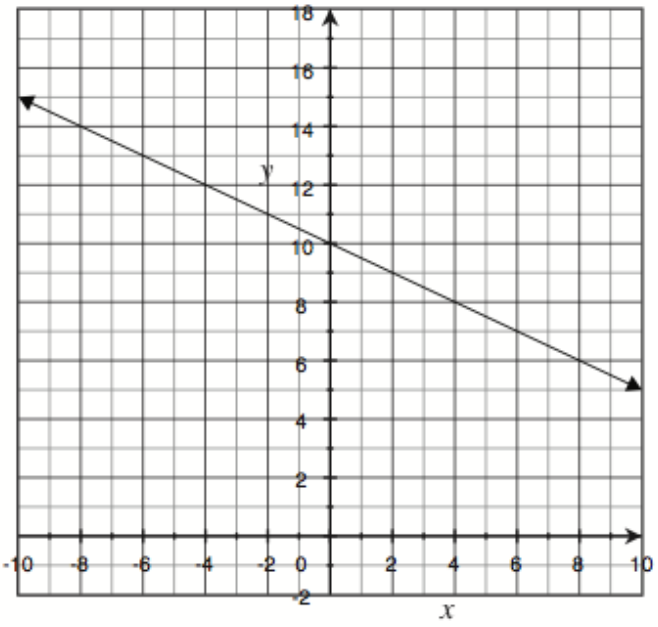

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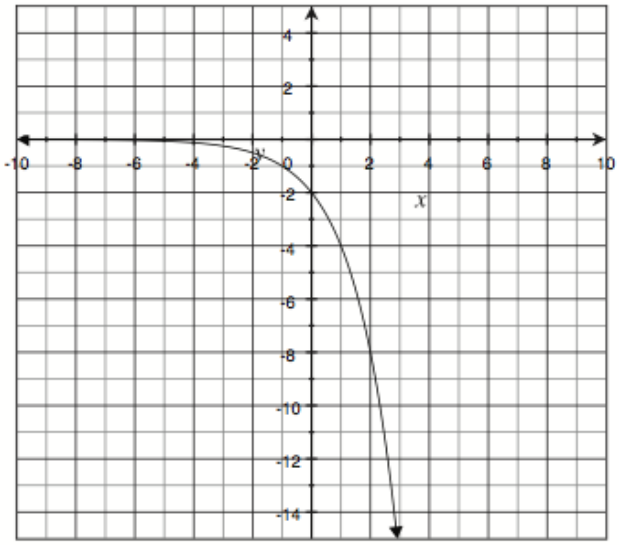

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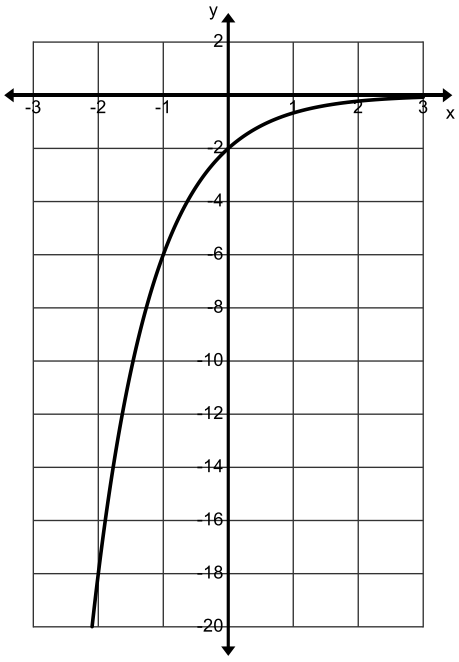

10.

x	y
0	16
2	13
3	11.5
5	8

11.

11.

x	y
1	750
2	150
3	30
4	6

11.

11.

12.

x	y
0	5184
2	432
4	36
5	3

13.

x	y
0	-4
1	-24
4	-5184
6	-186,624

Solve the following equations:

14. $\mathbf{1 = \frac{x-1}{9}}$	**15.** $\mathbf{2n - 6 = -34}$	**16.** $\mathbf{44 = -4(-2 + n)}$
17. $\mathbf{-210 = 7 - 7(-4v - 1)}$	**18.** $\mathbf{-240 = 5(6x - 6)}$	**19.** $\mathbf{\frac{14}{3}\left(-\frac{5}{2}x - \frac{3}{5}\right) = -\frac{1442}{15}}$

Find the value of *x* in each question.

20.

Perimeter $= 56\ units$

$x =$ _____

21.

Area $= 56\ units^2$

$x =$ _____

22.

Perimeter $= 20x\ units$

$x =$ _____

23.

Area $= 24\ units^2$

$x =$ _____