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Functions Test Review

4-1 Graphing Relationships
Choose the graph that best represents each situation.

1. Your distance from the ground as you ride a Ferris wheel for three minutes.

   _____

2. The height of a yo-yo during a competition.

   _____

Graph A

Graph B

3. Julius goes to a carnival with $10. Each ride ticket costs $2. Sketch a graph to show his remaining amount of money if he purchases 1, 2, 3, 4, or 5 ride tickets.
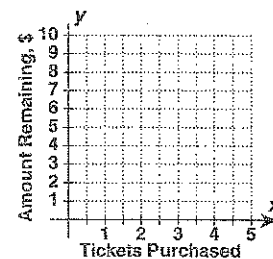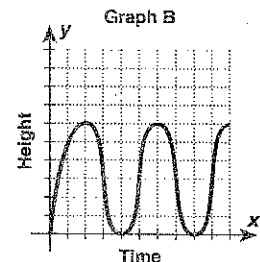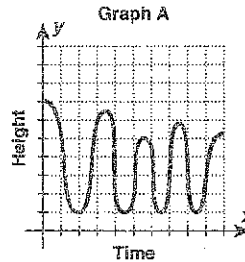
4-2 Relations and Functions
Give the domain and range of each relation. Tell whether the relation is a function. Explain.

4.

x	−3	−3	0	3	3
y	4	4	4	4	4

5.

Domain: _____

Range: _____

Explain: _____

_____

_____

_____
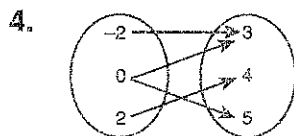
Domain: _____

Range: _____

Explain: _____

_____

_____

_____

4-3 Writing Functions
Determine a relationship between the x- and y-values. Write an equation.

6.

x	1	2	3	4
y	−2	−1	0	1

7.

x	1	2	3	4
y	−4	−8	−12	−16

_____

_____

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SECTION 4A

Identify the dependent and independent variables. Write a rule in function notation for each situation.

8. An administrative assistant can type 65 words per minute.

_____

9. An appliance repair company charges a $45 service fee plus $25 per hour.

_____

Evaluate each function for the given input values.

10. For $f(x) = 4x - 3$, find $f(x)$ when $x = 3$.   **11.** For $g(x) = x^3 - x$, find $g(x)$ when $x = -3$.

_____   _____

12. A graphics design company charges an initial $25 set up fee and $12 per t-shirt printed. Write a function to describe the situation. Find a reasonable domain and range for the function for up to 6 t-shirts.
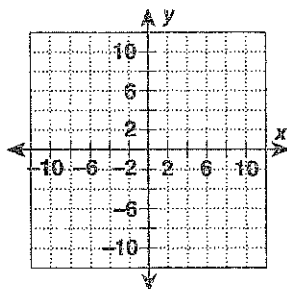
_____

4-4 Graphing Functions
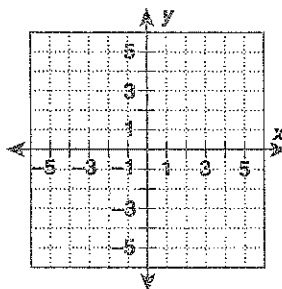Graph each function for the given domain. (List range values.)

13. $3x - y = 4$;
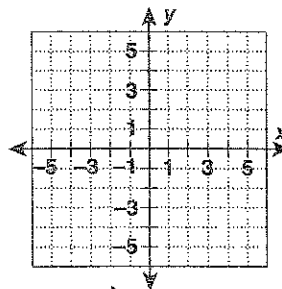
D: $\{-2, 0, 2, 4\}$
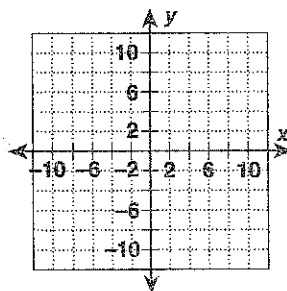

14. $y = 5 - x^2$

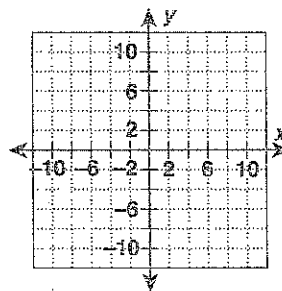D: $\{-2, 0, 2\}$

15. $y = 1 - 3x$

D: $\{-1, 0, 1, 2\}$

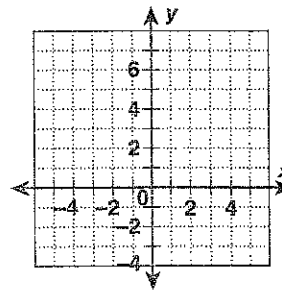Graph each function. (Choose 4 domain values) List range values

16. $x + y = 7$;
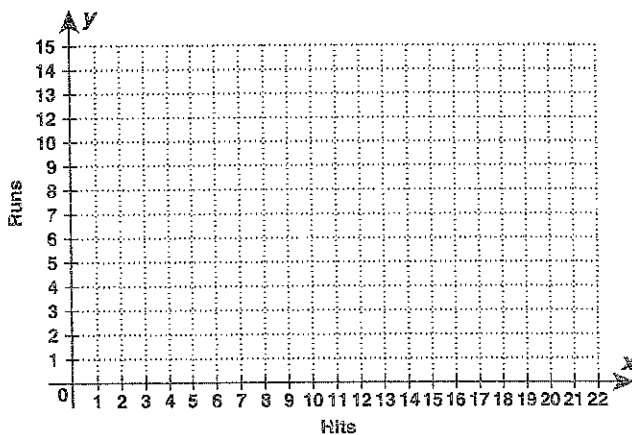

17. $y = |x| - 4$

18. $y = x^2 + 2$

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4-5 Scatter Plots and Trend Lines

The table shows the number of hits and
runs scored in a softball game.

hits	4	8	8	10	10	14	14
runs	1	5	7	7	9	10	12

1. Graph a scatter plot using the given data.

r ~

classify _____

2. Describe the correlation illustrated by the scatter plot. _____

3. Predict the number of runs out of 17 hits. _____

* write the equation of the trend line. _____

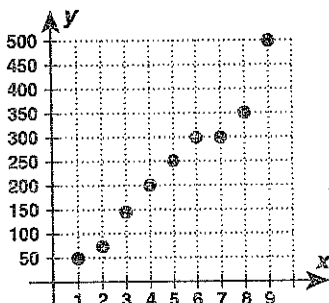**Choose the scatter plot below that best represents the described relationship.
Explain.**

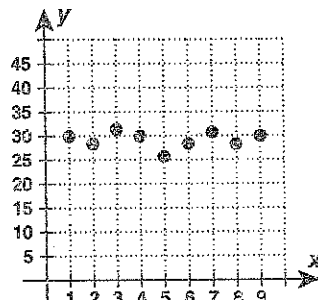4. age of a car and value of the car _____

_____

5. age of a car and miles per gallon _____

_____
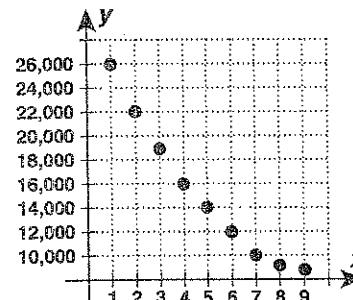
6. age of a car and the annual cost to repair the car _____

Graph A   Graph B   Graph C

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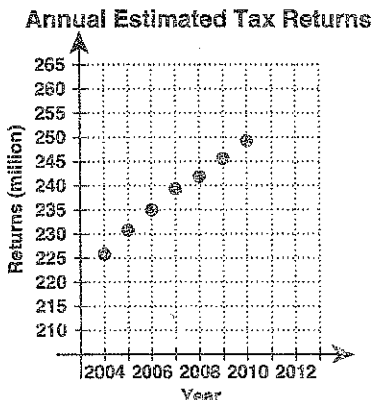
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7. The scatter plot shows the estimated annual tax returns for the years 2004 to 2010. Based on this relationship, predict the number of tax returns in 2013.

Annual Estimated Tax Returns

*what is the equation of the trend line? _____

4-6 Arithmetic Sequences

Determine whether each sequence appears to be an arithmetic sequence. If so, find the common difference and the next three terms.

8. 21, 13, 5, –3, ...

_____

9. 4, 8, 16, 32, ...

_____

10. –6.5, –4, –1.5, 1, ...

_____

Find the indicated term of the arithmetic sequence.

11. 25th term: 9, 2, –5, –12, ...

12. 16th term: $a_1 = 8$; $d = 3$

_____   _____

13. With no air resistance, a ball will roll down a ramp 9 feet during the first second, 16 feet during the next second, 23 feet during the third second, 30 feet during the fourth second, and so on. How many feet will the ball roll during the eighth second?

_____

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