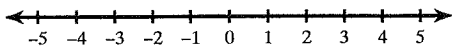
AFM Bellringer
Unit 4 Introduction

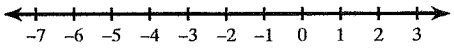
Name_____
Date_____ Period _____

Solve each inequality and graph its solution.

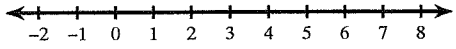
1) $0 < -n - 6n$



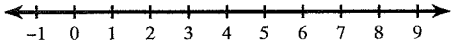
2) $-6 - r + 4r \geq -18$



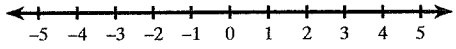
3) $-3(6x + 7) \geq -111$



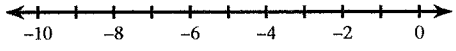
4) $6n + 6(4n + 8) > 108$



5) $-15 - 4a > 7(1 + 2a) - 4$

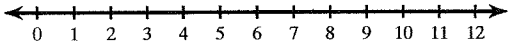


6) $-3(v - 4) \leq -8v - 23$

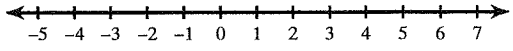


Solve each compound inequality and graph its solution.

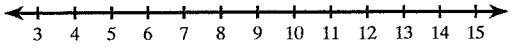
7) $8 < b + 6 \leq 12$



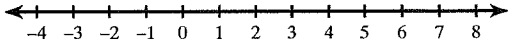
8) $-2v \geq 4$ or $v + 5 > 6$



9) $48 < 8v \leq 72$



10) $n + 3 \geq 1$ and $4 + n < 8$



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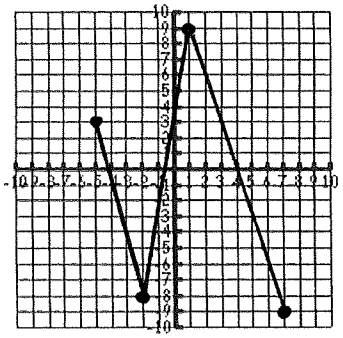
4-1 Functions

Name_____
Date_____ Period _____

Determine if the graph is a function, then state the domain and range.

1.

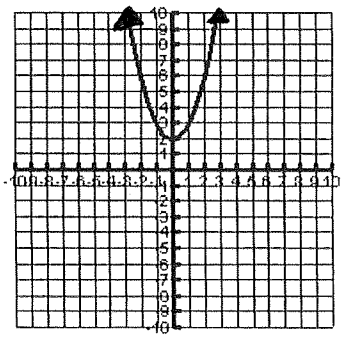


Domain: _____

Range: _____

Function: _____

2.

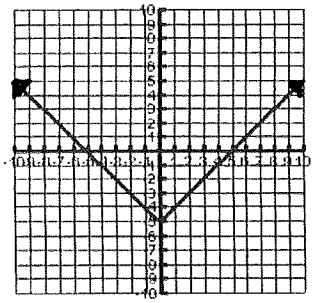


Domain: _____

Range: _____

Function: _____

3.

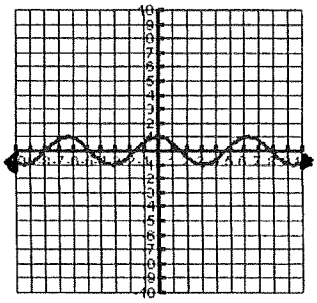


Domain: _____

Range: _____

Function: _____

4.

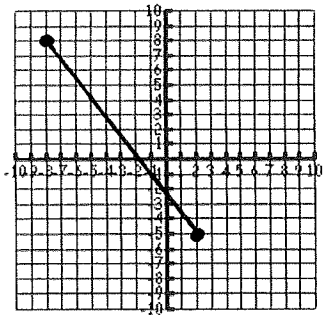


Domain: _____

Range: _____

Function: _____

5.

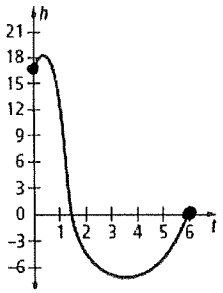


Domain: _____

Range: _____

Function: _____

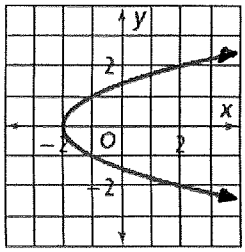
6.



Domain: _____

Range: _____

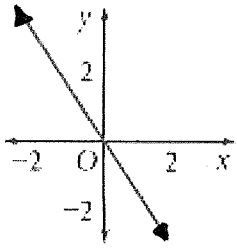
Function: _____

7. 

D: _____

R: _____

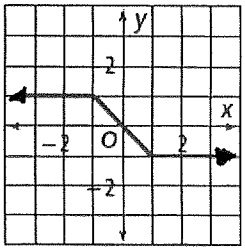
F: _____

8. 

D: _____

R: _____

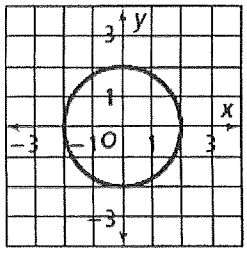
F: _____

9. 

D: _____

R: _____

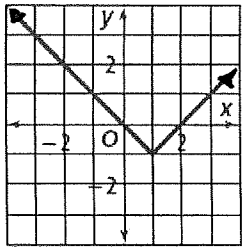
F: _____

10. 

D: _____

R: _____

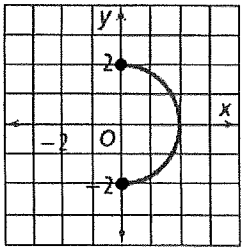
F: _____

11. 

D: _____

R: _____

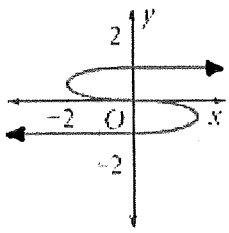
F: _____

12. 

D: _____

R: _____

F: _____

13. 

Domain: _____

Range: _____

Function: _____

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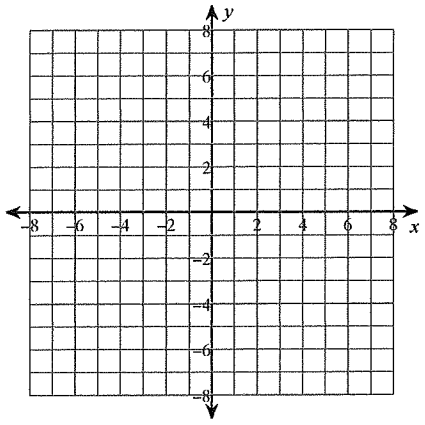
4-2 Finding Domain

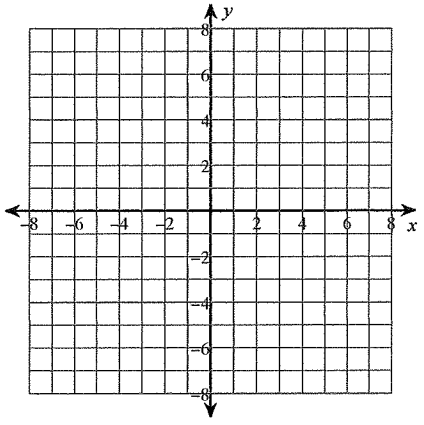
Name_____
Date_____ Period _____

Identify the domain and range of each. Then sketch the graph.

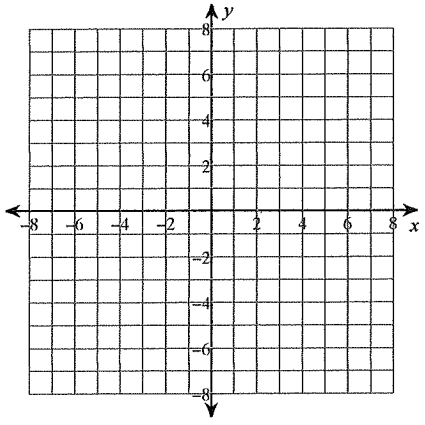
1) $y = \sqrt{x+6} - 4$



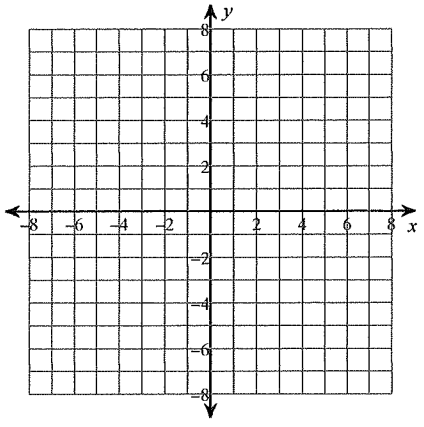
2) $y = -2\sqrt{x+5}$



3) $y = 4 + \sqrt{x+3}$

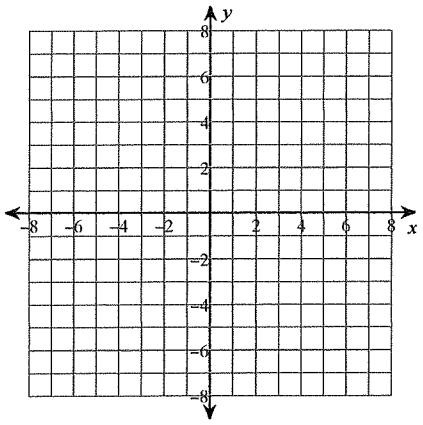


4) $y = -1 - 2\sqrt{x}$

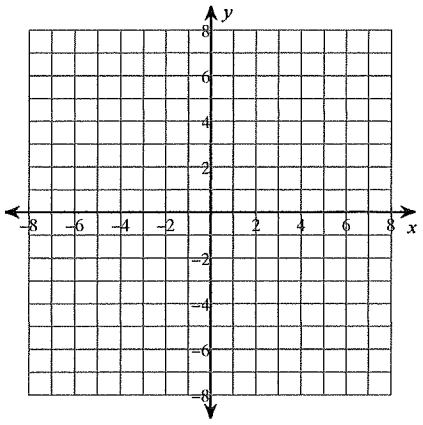


Identify the points of discontinuity, domain, and range of each. Then sketch the graph.

5) $f(x) = \dfrac{4}{x-1}$

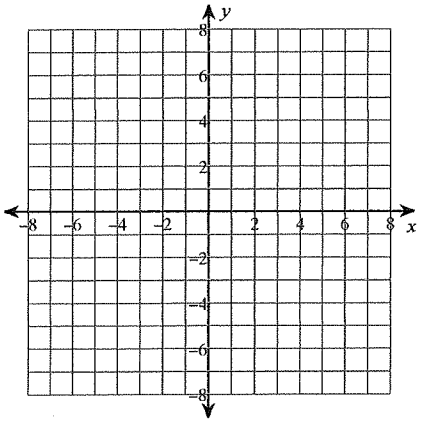


6) $f(x) = \dfrac{1}{x+4}$

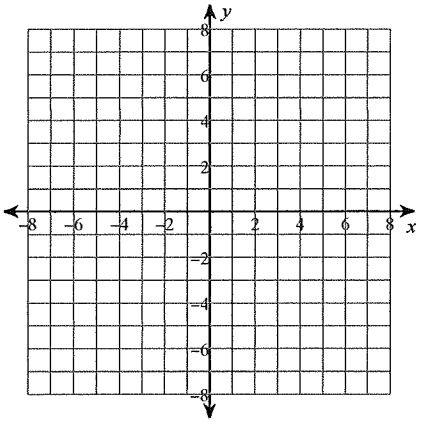


Identify the points of discontinuity, x-intercepts, and domain of each. Then sketch the graph.

7) $f(x) = \dfrac{x^2 - 16}{2x - 2}$



8) $f(x) = \dfrac{x^2 + 5x + 6}{-x^2 - 4x - 3}$



Name_____
Date_____ Period _____

Evaluate each function.

1) $f(t) = t^3 + 2t$; Find $f(-3)$

2) $f(t) = t^2 + 2$; Find $f(9)$

3) $f(x) = x^2 - 2x$; Find $f(-8)$

4) $p(x) = -x^2 + x$; Find $p(x + 2)$

5) $h(a) = a^2 + 5a$; Find $h(a^2)$

6) $h(n) = n^2 - 4n$; Find $h(n - 4)$

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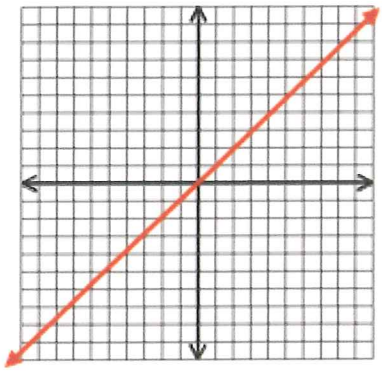
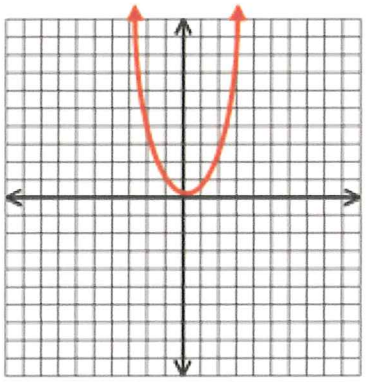
4-4 Parent Functions

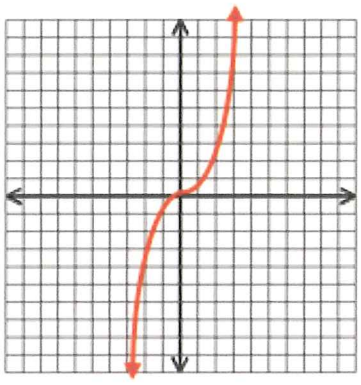
Name_____
Date_____ Period _____

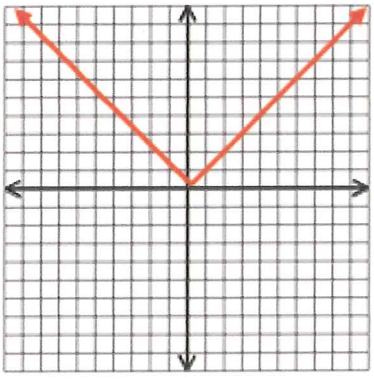
Names: A) absolute value B) cubic C) linear D) quadratic E) radical

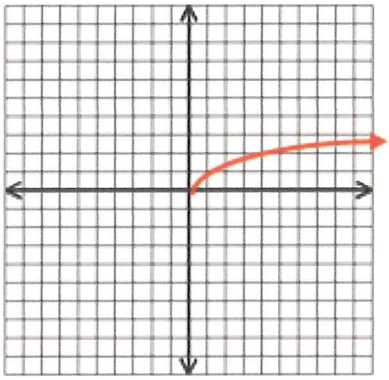
Equations: F) $y = x$ G) $y = x^2$ H) $y = x^3$ I) $y = |x|$ J) $y = \sqrt{x}$

1. 

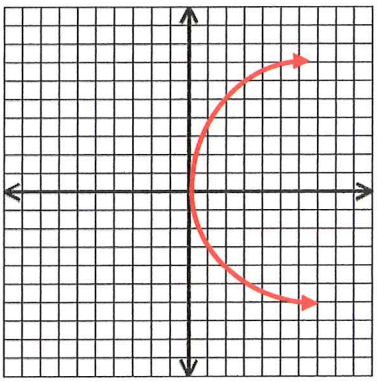
2. 

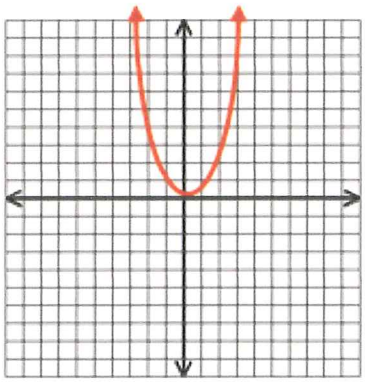
3. 

4. 

5. 

Is it a function? What is the domain and Range

6. 



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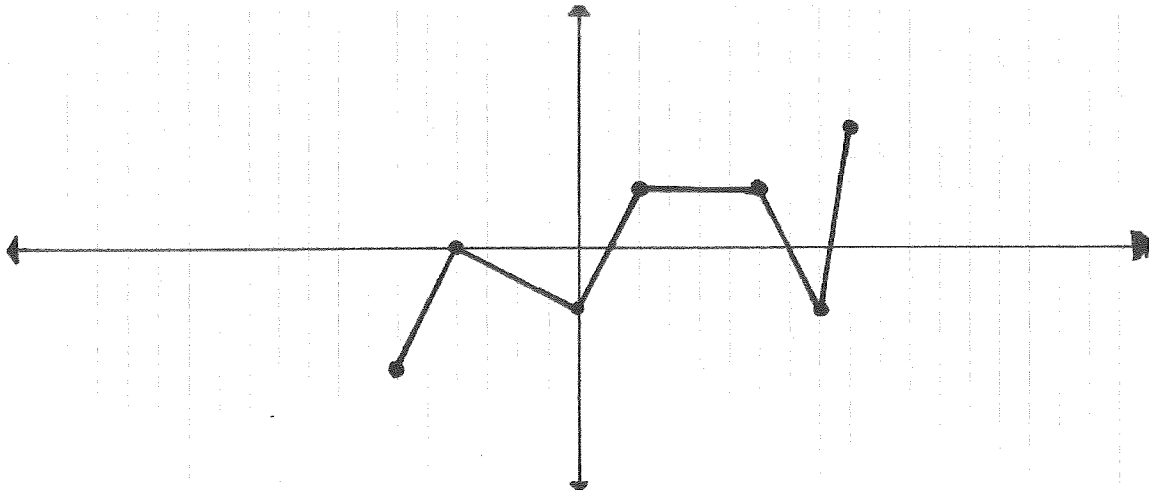
4-5 Transformation

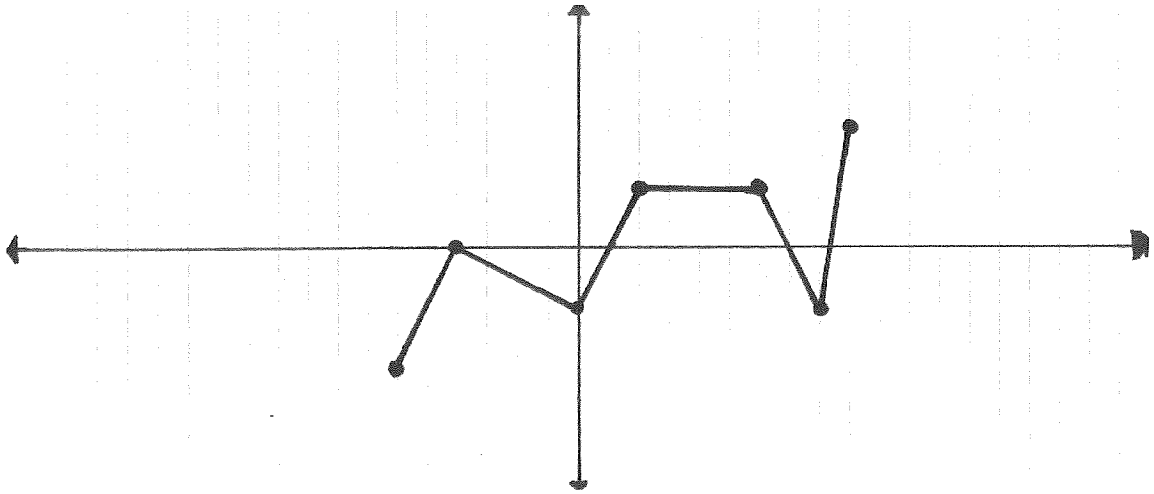
Name_____
Date_____ Period _____

Given the graph of $f(x)$, make the following transformations.

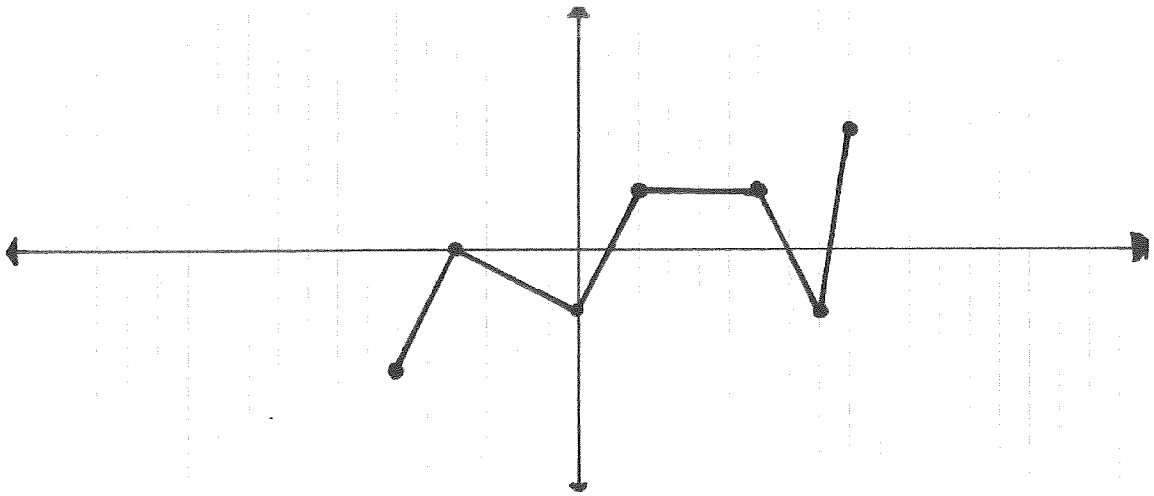
1. $f(x+5)$



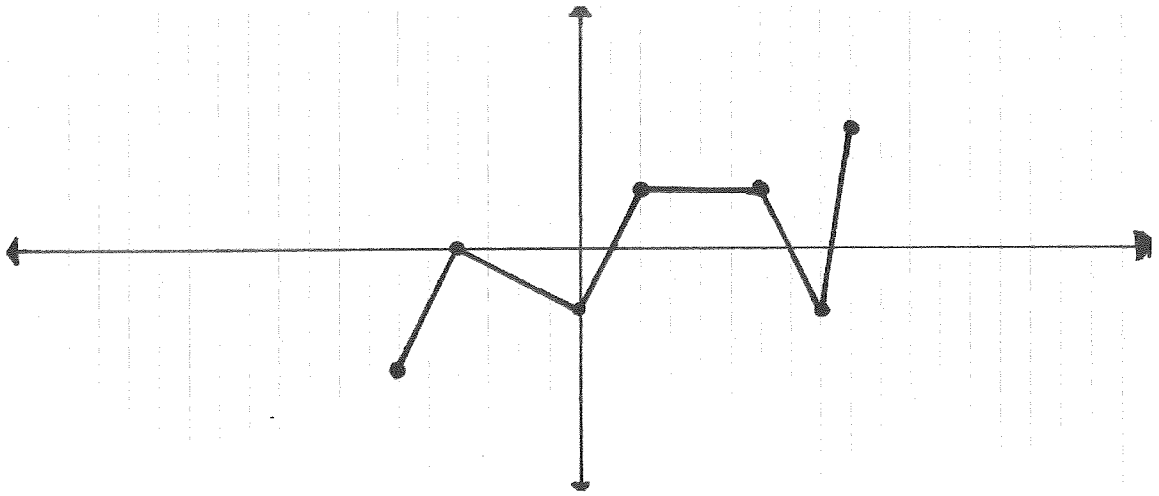
2. $f(x)-3$



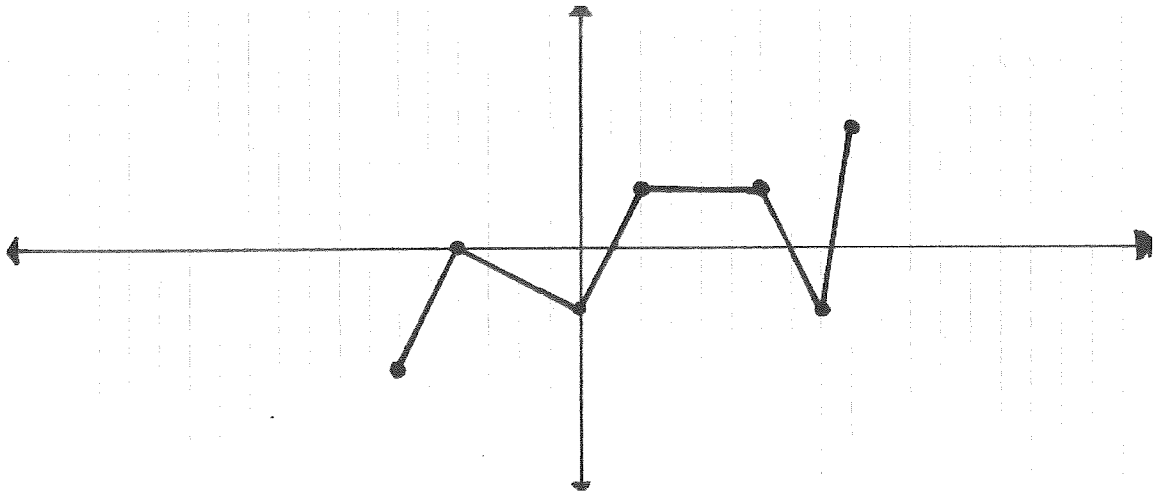
3. $f(-x)$



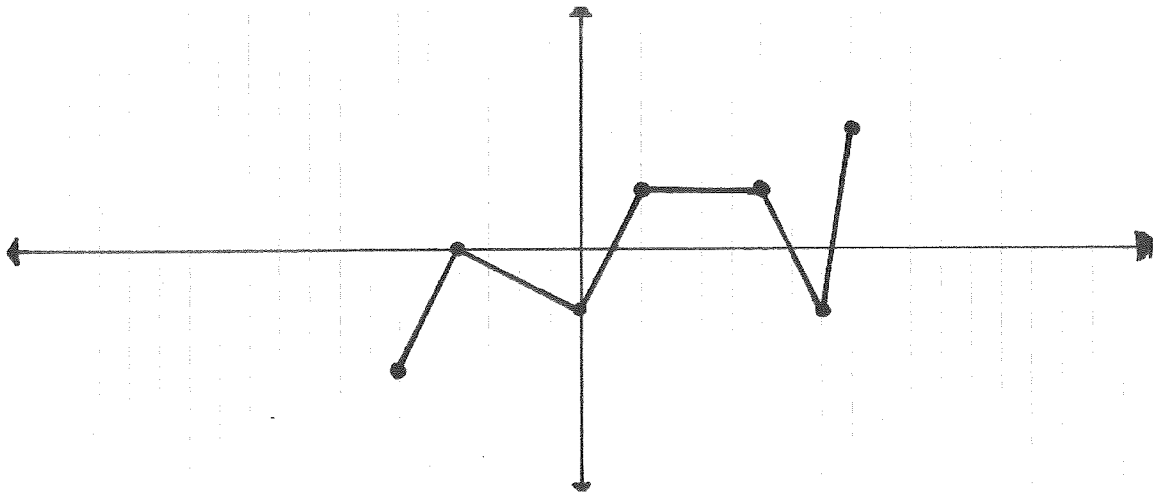
4. $\frac{1}{2}f(x)$



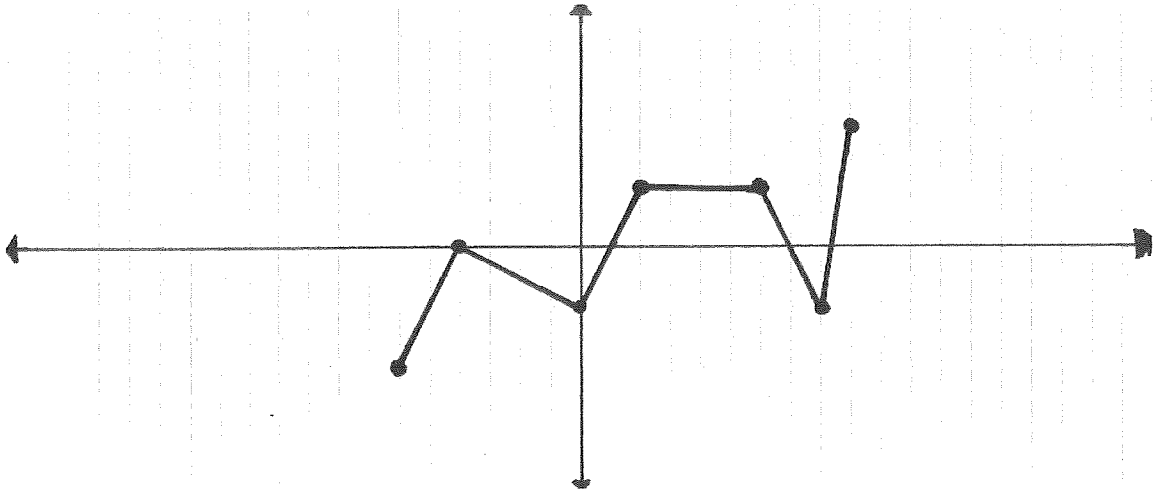
5. $f(x) + 4$



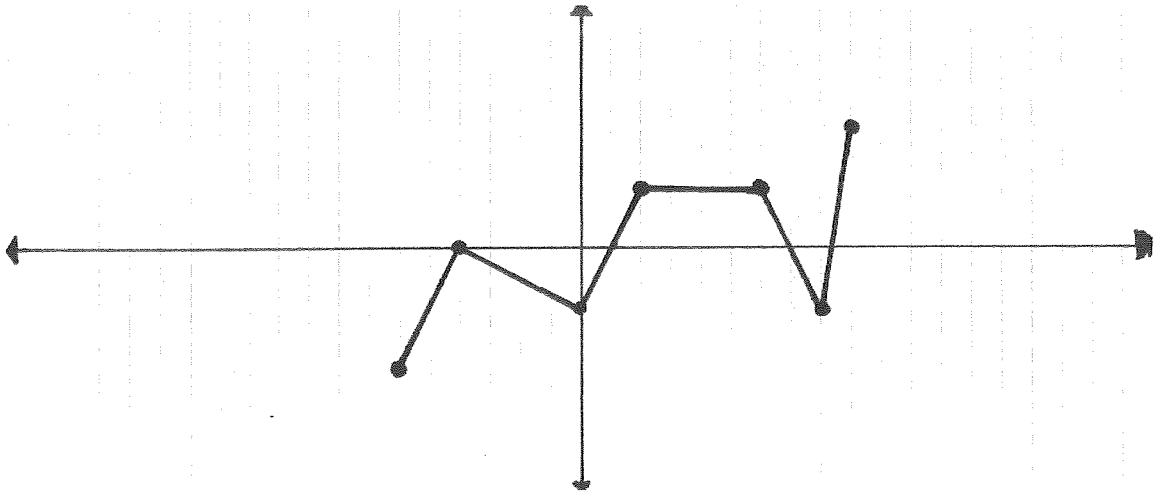
6. $-f(x)$



7. $f(x-6)$



8. $2f(x)$



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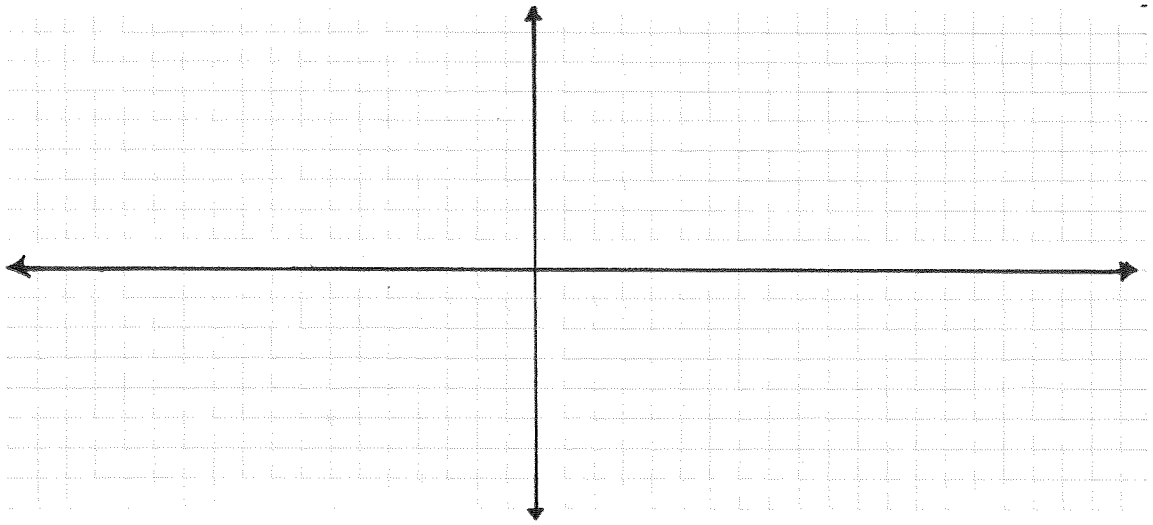
4-6 Graphing Piecewise Function

Name_____
Date_____ Period _____

Graph the following $f(x) = \begin{cases} 4, & x \leq -2 \\ x^2, & -2 < x < 2 \\ 3 - 2x, & x > 2 \end{cases}$



Given the graph of $f(x)$, answer the questions that follow.

1. State the interval(s) on which *f(x)* is increasing.
2. State the interval(s) on which *f(x)* is decreasing.
3. State the interval(s) on which *f(x)* is constant.
4. State the domain in interval notation.
5. State the range in interval notation.
6. Is it continuous? If not, state the type of discontinuity and the x-coordinate at which the discontinuity occurs.
7. Find $f(-5) =$ $f(1) =$ $f(2) =$ $f(5) =$

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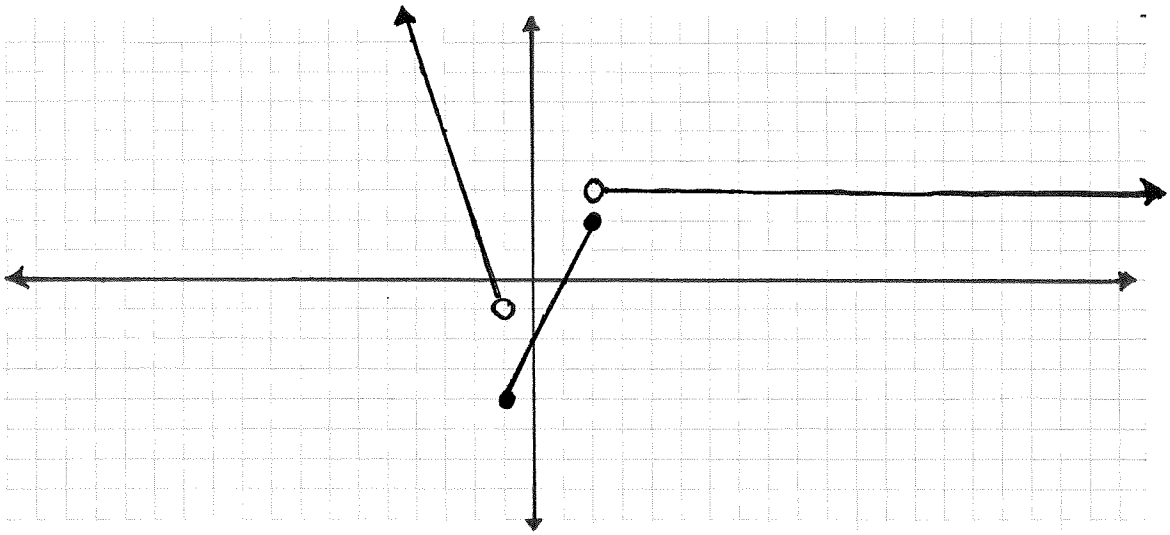
4-7 Writing Piecewise Function

Name_____
Date_____ Period _____



Write a piecewise functions for the graph above.

$$f(x) = \begin{cases} \\ \\ \end{cases}$$

Given the graph of $f(x)$, answer the following questions that follow.

1. State the interval(s) on which *f(x)* is increasing.
2. State the interval(s) on which *f(x)* is decreasing.
3. State the interval(s) on which *f(x)* is constant.
4. State the domain in interval notation.
5. State the range in interval notation.
6. Is it continuous? If not, state the type of discontinuity and the x-coordinate at which the discontinuity occurs.
7. Find $f(-3) =$ $f(-1) =$ $f(1) =$ $f(8) =$