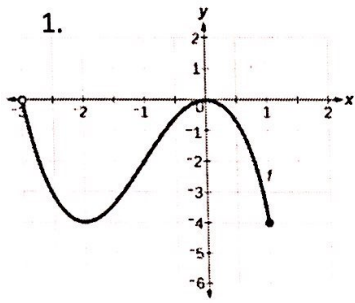


Honors Math 3 – Graph analysis worksheet

For each of the following, determine if the graph is a function and give the domain and range in interval notation. If it IS a function, also determine where the function is increasing/decreasing and positive/negative.



Function?

D:

R:

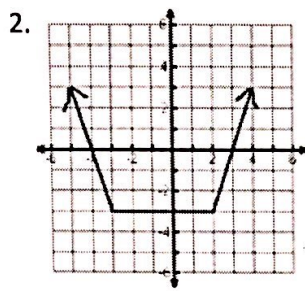
Incr

Decr

+

-

$f(-2) =$



Function?

D:

R:

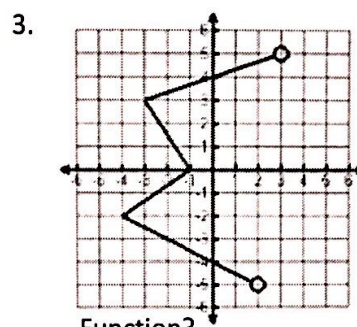
Incr

Decr

+

-

$f(x)=0$ when $x=$



Function?

D:

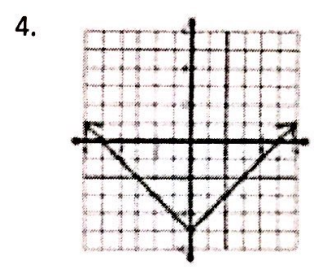
R:

Incr

Decr

+

-



Function?

D:

R:

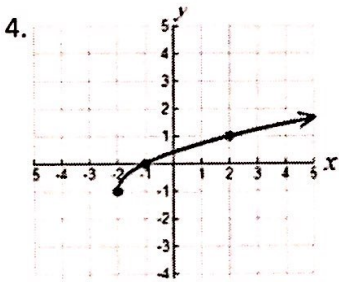
Incr

Decr

+

-

$f(x)=0$ when $x=$



Function?

D:

R:

Incr

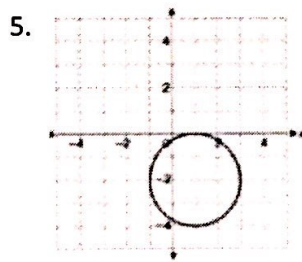
Decr

+

-

$f(2) =$

$3f(-2) =$



Function?

D:

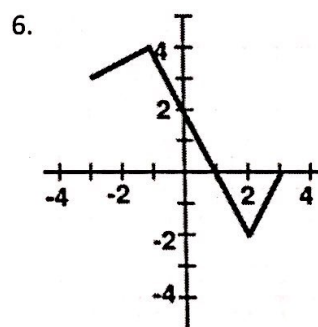
R:

Incr

Decr

+

-



Function?

D:

R:

Incr

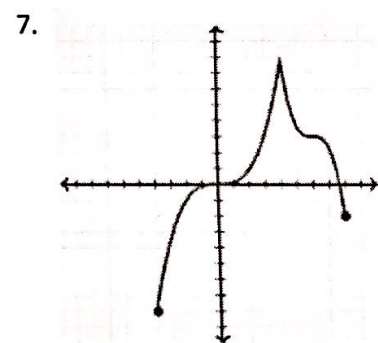
Decr

+

-

Max?

Min?



Function?

D:

R:

Incr

Decr

+

-

$2f(-4) - 3f(4) =$

Piecewise Functions

Period: _____

Evaluate the function for the given value of x .

$$f(x) = \begin{cases} 3, & \text{if } x \leq 0 \\ 2, & \text{if } x > 0 \end{cases}$$

$$g(x) = \begin{cases} x + 5, & \text{if } x \leq 3 \\ 2x - 1, & \text{if } x > 3 \end{cases}$$

$$h(x) = \begin{cases} \frac{1}{2}x - 4, & \text{if } x \leq -2 \\ 3 - 2x, & \text{if } x > -2 \end{cases}$$

1. $f(2)$

2. $f(-4)$

3. $f(0)$

4. $f\left(\frac{1}{2}\right) + 2f(6)$

5. $g(7)$

6. $3g(0)$

7. $g(-1)$

8. $g(3) - 4g(4)$

9. $h(-4)$

10. $h(-2)$

11. $h(-1) + h(0)$

12. $h(6)$

Match the piecewise function with its graph.

13. $f(x) = \begin{cases} x - 4, & \text{if } x \leq 1 \\ 3x, & \text{if } x > 1 \end{cases}$

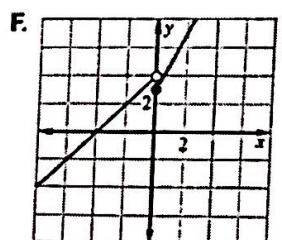
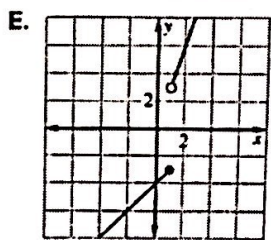
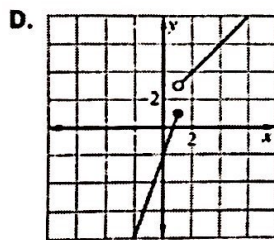
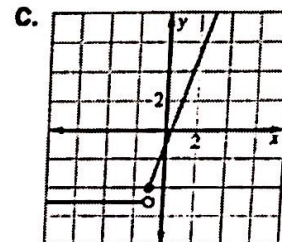
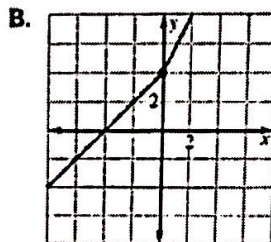
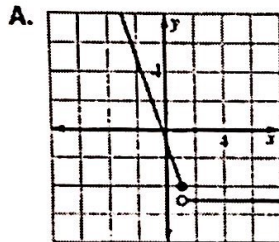
14. $f(x) = \begin{cases} x + 4, & \text{if } x \leq 0 \\ 2x + 4, & \text{if } x > 0 \end{cases}$

15. $f(x) = \begin{cases} 3x - 2, & \text{if } x \leq 1 \\ x + 2, & \text{if } x > 1 \end{cases}$

16. $f(x) = \begin{cases} 2x + 3, & \text{if } x \geq 0 \\ x + 4, & \text{if } x < 0 \end{cases}$

17. $f(x) = \begin{cases} 3x - 1, & \text{if } x \geq -1 \\ -5, & \text{if } x < -1 \end{cases}$

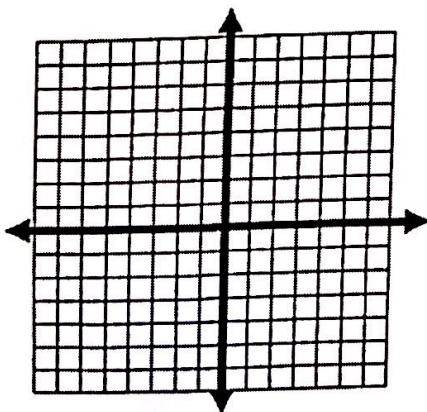
18. $f(x) = \begin{cases} -3x - 1, & \text{if } x \leq 1 \\ -5, & \text{if } x > 1 \end{cases}$



Graph the function.

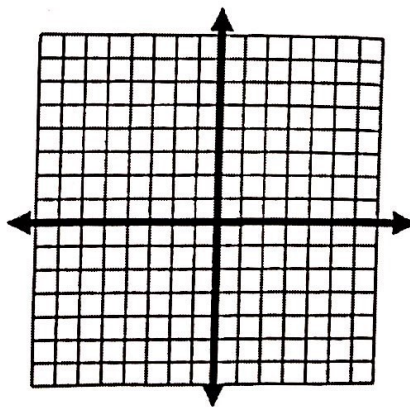
19.

$$f(x) = \begin{cases} x + 3 & \text{if } x \leq 0 \\ 2x & \text{if } x > 0 \end{cases}$$



20.

$$f(x) = \begin{cases} x + 1 & \text{if } x < 3 \\ 2x - 4 & \text{if } x \geq 3 \end{cases}$$



21.

$$f(x) = \begin{cases} x + 1 & \text{if } x < 1 \\ -x + 1 & \text{if } 1 \leq x < 3 \\ x - 1 & \text{if } x \geq 3 \end{cases}$$

