

Name \_\_\_\_\_

Date \_\_\_\_\_

Piecewise Functions Quiz Review

#1-4: Evaluate the following functions for the given value of  $x$ .

$$f(x) = \begin{cases} -3x + 7, & \text{if } x < -1 \\ x^2 + 2, & \text{if } -1 \leq x < 5 \\ 6, & \text{if } x \geq 5 \end{cases}$$

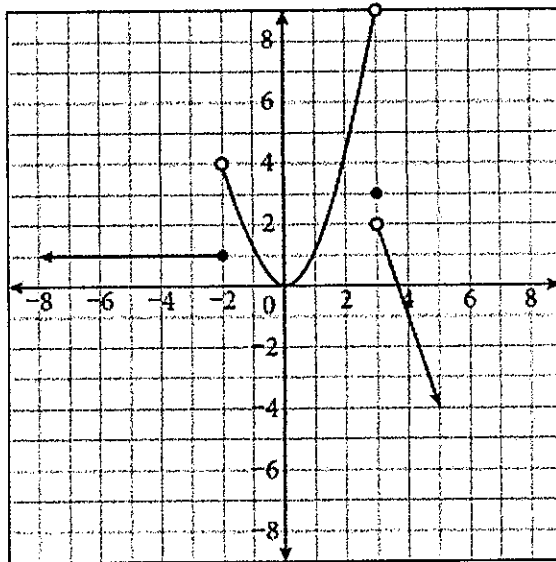
1.  $f(0) =$

2.  $f(-1) =$

3.  $f(-2) =$

4.  $f(5) =$

#5-10: Evaluate  $f(x)$  based on the graph below.



5.  $f(3) =$

6.  $f(-1) =$

7.  $f(4) =$

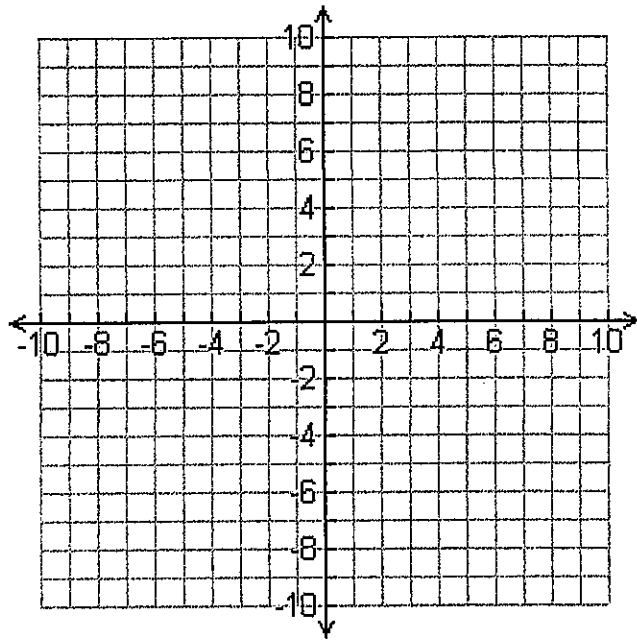
8.  $f(-2) =$

9.  $f(2) =$

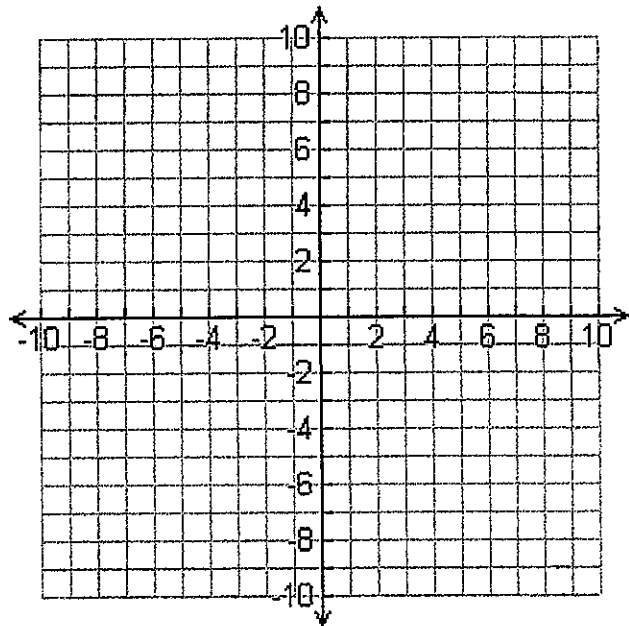
10.  $f(-12) =$

Graph the following functions

$$11. f(x) = \begin{cases} x+6, & \text{if } x < 2 \\ x-3, & \text{if } x \geq 2 \end{cases}$$

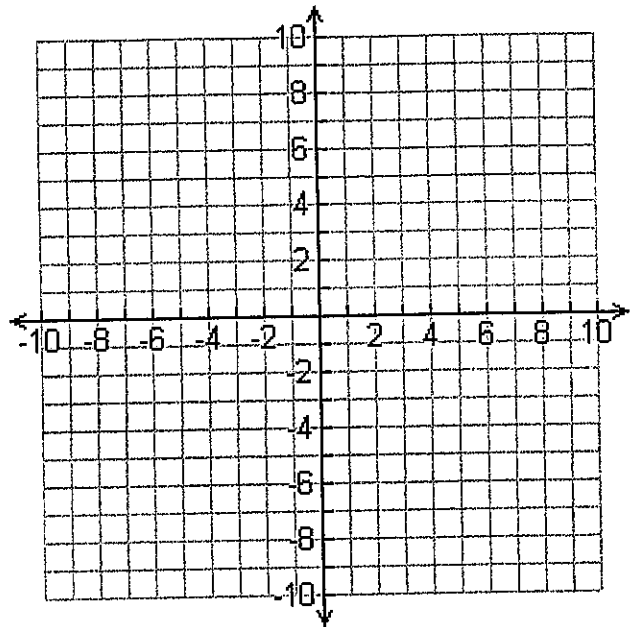


$$12. f(x) = \begin{cases} x+2, & \text{if } -5 < x < 3 \\ -3, & \text{if } x = 3 \\ -x+4, & \text{if } x > 3 \end{cases}$$



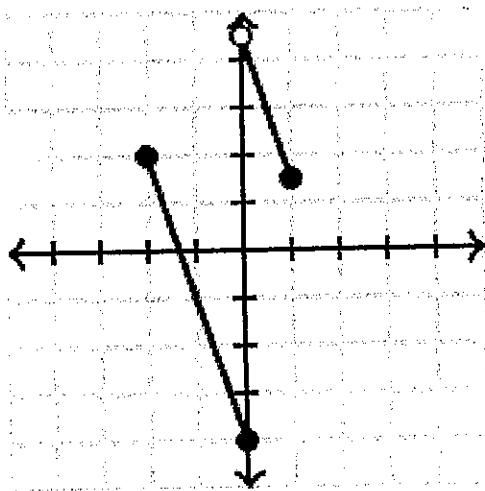
Graph the following step functions.

$$13. f(x) = \begin{cases} -5, & \text{if } -2 \leq x < 1 \\ -3, & \text{if } 1 \leq x < 4 \\ -1, & \text{if } 4 \leq x < 7 \\ 1, & \text{if } 7 \leq x < 10 \end{cases}$$

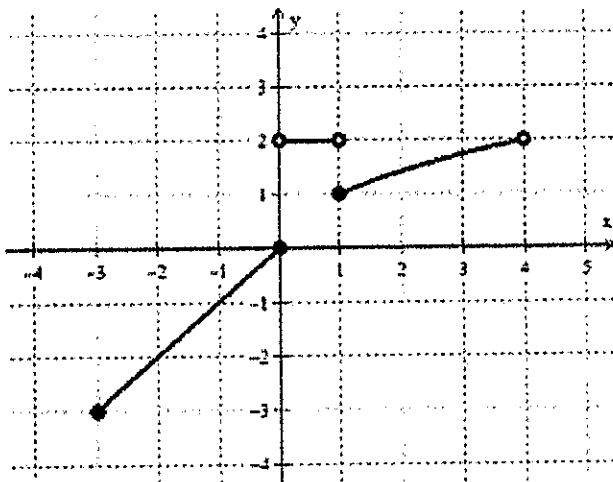


#14-15: Write equations for the piecewise functions graphed below. (1 box equals 1 unit)

14.



15.



**#16-20: Evaluate the following.**

16.  $[7.6]$

17.  $[-23.98]$

18.  $[17.625]$

19.  $[-6.9]$

20.  $[-14.3]$

Name key

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Piecewise Functions Quiz Review

#1-4: Evaluate the following functions for the given value of  $x$ .

$$f(x) = \begin{cases} -3x + 7, & \text{if } x < -1 \\ x^2 + 2, & \text{if } -1 \leq x < 5 \\ 6, & \text{if } x \geq 5 \end{cases}$$

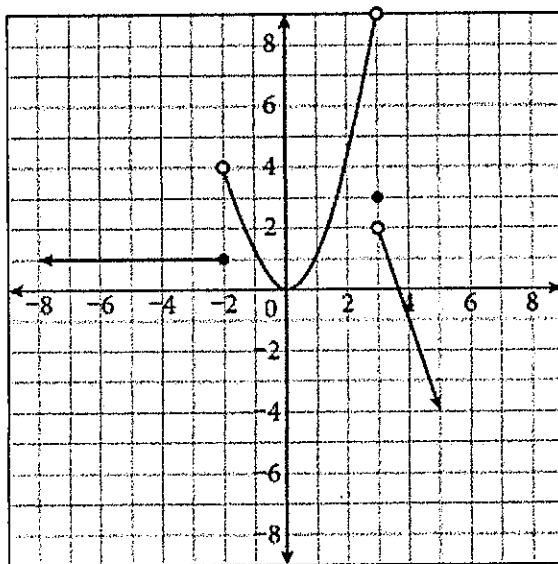
1.  $f(0) =$   
 $f(x) = x^2 + 2$   
 $f(0) = (0)^2 + 2$   
 $f(0) = 0 + 2$   
 $f(0) = 2$

2.  $f(-1) =$   
 $f(x) = x^2 + 2$   
 $f(-1) = (-1)^2 + 2$   
 $f(-1) = 1 + 2$   
 $f(-1) = 3$

3.  $f(-2) =$   
 $f(x) = -3x + 7$   
 $f(-2) = -3(-2) + 7$   
 $f(-2) = 6 + 7$   
 $f(-2) = 13$

4.  $f(5) =$   
 $f(x) = 6$   
 $f(5) = 6$

#5-10: Evaluate  $f(x)$  based on the graph below.



5.  $f(3) = 3$

6.  $f(-1) = 1$

7.  $f(4) = -1$

8.  $f(-2) = 1$

9.  $f(2) = 4$

10.  $f(-12) = 1$

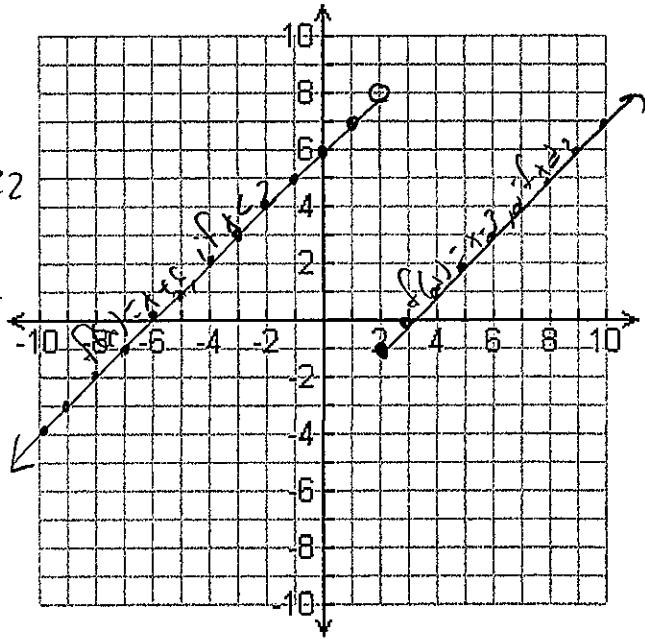
Graph the following functions

$$11. f(x) = \begin{cases} x+6, & \text{if } x < 2 \\ x-3, & \text{if } x \geq 2 \end{cases}$$

$$f(x) = x+6 \text{ if } x < 2 \quad \left| \quad f(x) = x-3 \text{ if } x \geq 2$$

$m = \frac{1}{1}$                        $m = \frac{1}{1}$   
↑                              ↑  
open                              closed

$B = 6$                                $B = -3$



$$12. f(x) = \begin{cases} x+2, & \text{if } -5 < x < 3 \\ -3, & \text{if } x = 3 \\ -x+4, & \text{if } x > 3 \end{cases}$$

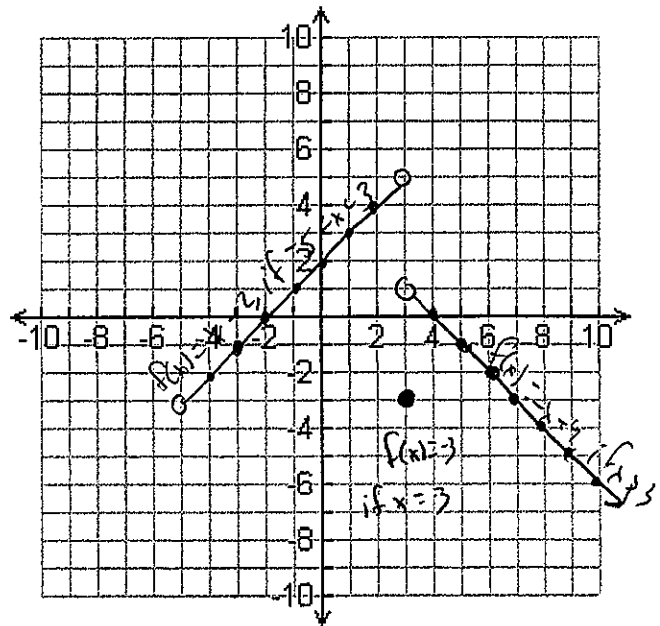
$$f(x) = x+2 \text{ if } -5 < x < 3 \quad \left| \quad f(x) = -3 \text{ if } x = 3 \quad \left| \quad f(x) = -x+4 \text{ if } x > 3$$

↑   ↑                      ↑                      ↑  
open   open                      closed                      open

$m = \frac{1}{1}$                        $m = 0$                        $m = -\frac{1}{1}$

$B = 2$                        $B = -3$                        $B = 4$

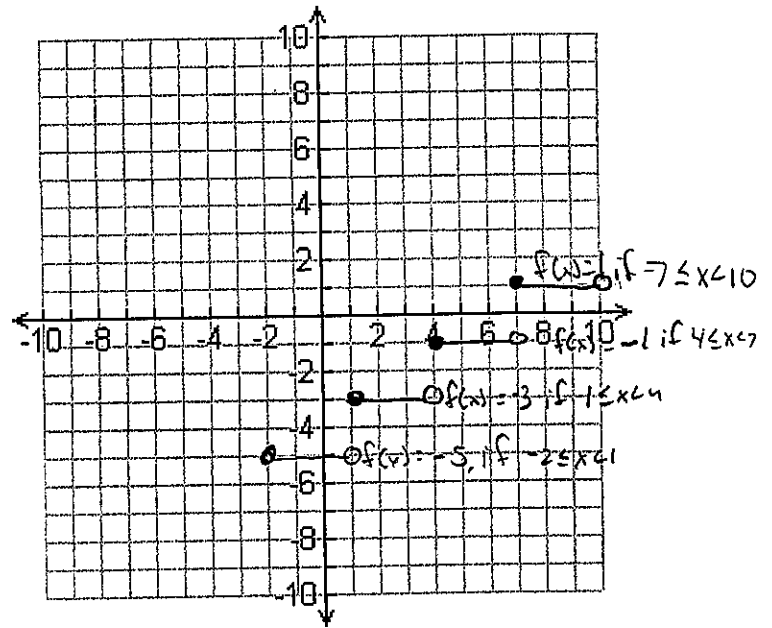
$(3, -3)$   
↑  
coordinate



Graph the following step functions.

$$13. f(x) = \begin{cases} -5, & \text{if } -2 \leq x < 1 \\ -3, & \text{if } 1 \leq x < 4 \\ -1, & \text{if } 4 \leq x < 7 \\ 1, & \text{if } 7 \leq x < 10 \end{cases}$$

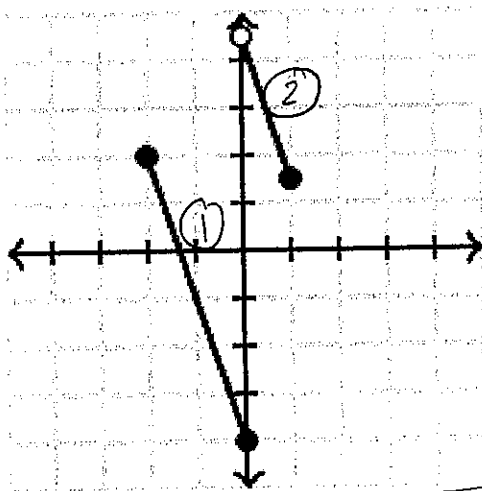
$f(x) = -5$ , if $-2 \leq x < 1$ ↑ ↑ closed open	$f(x) = -3$ , if $1 \leq x < 4$ ↑ ↑ closed open	$f(x) = -1$ , if $4 \leq x < 7$ ↑ ↑ closed open	$f(x) = 1$ , if $7 \leq x < 10$ ↑ ↑ closed open
$m=0$	$m=0$	$m=0$	$m=0$
$b=-5$	$b=-3$	$b=-1$	$b=1$



#14-15: Write equations for the piecewise functions graphed below. (1 box equals 1 unit)

14.

Read graph from left to right



①

$$m = -3$$

$$b = -4$$

$$y = -3x - 4$$

$$-2 \leq x < 0$$

②

$$m = -3$$

$$b = 5$$

$$y = -3x + 5$$

$$0 < x \leq 1$$

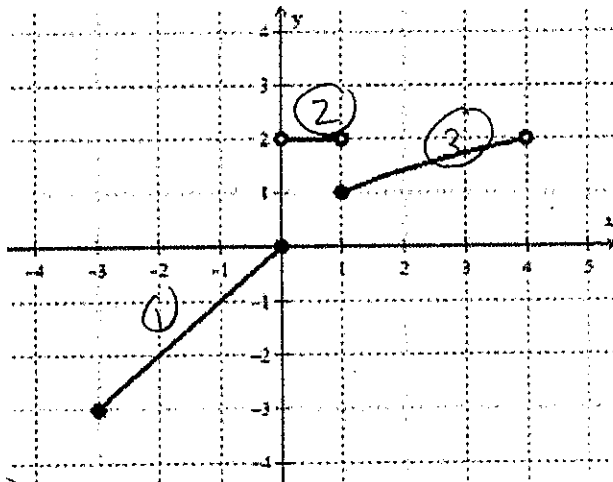
$$f(x) = \begin{cases} -3x - 4, & \text{if } -2 \leq x < 0 \\ -3x + 5, & \text{if } 0 < x \leq 1 \end{cases}$$

Domain must be in numerical order

Read graph from left to right

Domain must be in numerical order

15.



$$f(x) = \begin{cases} x, & \text{if } -3 \leq x < 0 \\ 2, & \text{if } 0 < x < 1 \\ \frac{1}{3}x + \frac{2}{3}, & \text{if } 1 \leq x < 4 \end{cases}$$

①  
 $m=1$   
 $b=0$   
 $y=x$   
 $-3 \leq x < 0$

②  
 $m=0$   
 $b=2$   
 $y=2$   
 $0 < x < 1$

③  $m = \frac{1}{3}$   
 $(1, 1)$   
 $y - y_1 = m(x - x_1)$   
 $y - 1 = \frac{1}{3}(x - 1)$   
 $y - 1 = \frac{1}{3}x - \frac{1}{3}$   
 $+1 \qquad +1$   
 $y = \frac{1}{3}x + \frac{2}{3}$   
 $y = \frac{1}{3}x + \frac{2}{3}$   
 $1 \leq x < 4$

#16-20: Evaluate the following.

$\lfloor \quad \rfloor =$  greatest integer value

16.  $\lfloor 7.6 \rfloor = \boxed{7}$

$x \leq 7.6$

17.  $\lfloor -23.98 \rfloor = \boxed{-24}$

$x \leq -23.98$

18.  $\lfloor 17.625 \rfloor = \boxed{17}$

$x \leq 17.625$

19.  $\lfloor -6.9 \rfloor = \boxed{-7}$

$x \leq -6.9$

20.  $\lfloor -14.3 \rfloor = \boxed{-14.3}$

$x \leq -14.3$

Calc:  $\boxed{\text{MATH}} \rightarrow \boxed{\text{Num 5: int}}$