

NAME: _____ PERIOD: _____ DATE: _____

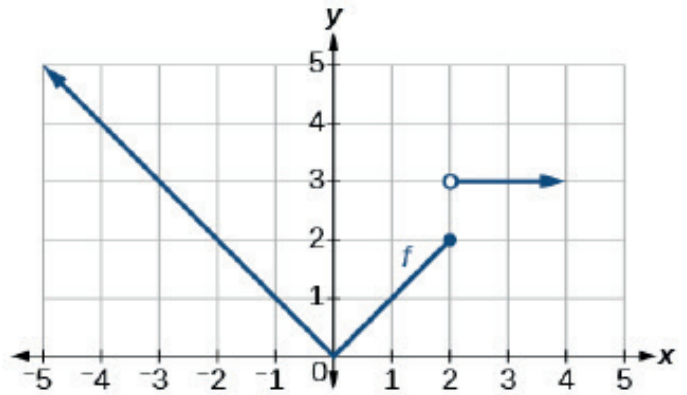
Homework Problem Set

1. Use the graph of $f(x)$ at the right to answer the following:

A. Find $f(-2)$ $f(-2) = 2$

B. Find $f(2)$ $f(2) = 2$

C. Find $f(11)$ $f(11) = 3$



D. For what value of x is $f(x) = 4$?

$x = -4$

$f(-4) = 4$

E. For what value of x is $f(x) = 3$?

$x = -3$ and $x > 2$

2. In the *What's My Rule?* game, Tyr had the following input and output values. What is the rule for Tyr's values?

Input (x-value)	-2	-1	0	1
Output (y-value)	0	1	2	3

$y = x + 2$
OR
 $f(x) = x + 2$

3. In the *What's My Rule?* game, Lily had the following input and output values. What is the rule for Lily's values?

Input (x-value)	-2	-1	0	1
Output (y-value)	4	2	0	-2

$y = -2x$
OR
 $f(x) = -2x$

4. **Challenge** In the *What's My Rule?* game, Davis had the following input and output values. What is the rule for Davis' values?

Input (x-value)	-2	-1	0	1
Output (y-value)	3	1	-1	-3

$y = -2x - 1$
OR
 $f(x) = -2x - 1$

5. **Open Ended** Find at least three different rules that could have an input value of 2 and an output value of -3. *Answers will vary.*

Rule 1: $y = x - 5$ OR $f(x) = x - 5$

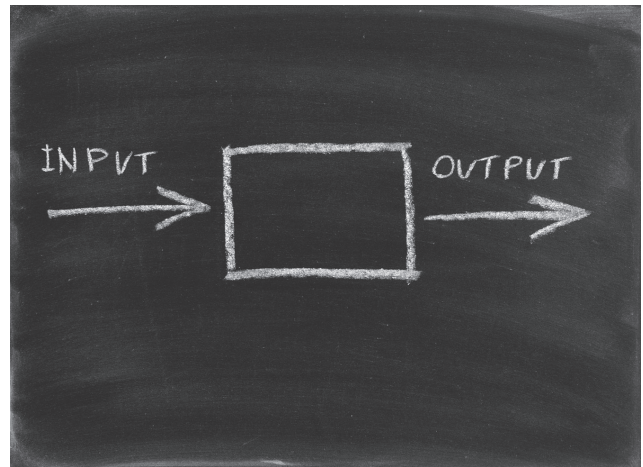
Rule 2: $y = 2x - 7$ OR $f(x) = 2x - 7$

Rule 3: $y = -3$ OR $f(x) = -3$

6. What input value is needed for an output value of 5 with the function $f(x) = -x + 4$?
How do you know you are correct?

$f(x) = -x + 4$
 $5 = -x + 4$
 $1 = -x$
 $-1 = x$

Check:
 $f(-1) = -(-1) + 4$
 $f(-1) = 5 \checkmark$



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7. What input value is needed for an output value of -2 using the function $f(x) = 2x + 4$?
How do you know you are correct?

$f(x) = 2x + 4$
 $-2 = 2x + 4$
 $-6 = 2x$
 $-3 = x$

Check:
 $f(-3) = 2(-3) + 4$
 $f(-3) = -6 + 4$
 $f(-3) = -2 \checkmark$

...

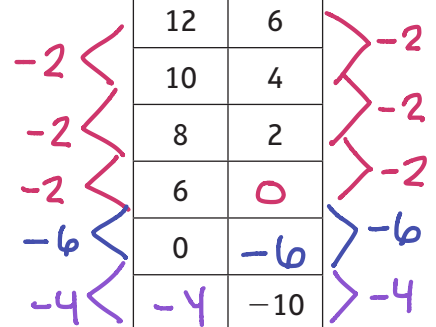
8. Complete the table and then write the linear function's rule.

Rule:
 $y = x - 6$
 OR
 $f(x) = x - 6$

$\frac{y}{x} = \frac{-2}{-2} = 1$

slope is 1

x	f(x)
12	6
10	4
8	2
6	0
0	-6
-4	-10



To fill in blanks... think about slope & what we have to do to keep slope same.

Find each of the following.

<p>9. If $f(x) = 2x - 1$, then $f(-2) = \underline{-5}$.</p> $f(-2) = 2x - 1$ $= 2(-2) - 1$ $= -4 - 1$ $f(-2) = -5$	<p>10. If $g(x) = \sqrt{x+5}$, then $g(11) = \underline{4}$.</p> $g(11) = \sqrt{x+5}$ $g(11) = \sqrt{11+5}$ $g(11) = \sqrt{16}$ $g(11) = 4$	<p>11. If $h(x) = x^2 - 3x + 5$, then $h(-3) = \underline{23}$.</p> $h(-3) = x^2 - 3x + 5$ $= (-3)^2 - 3(-3) + 5$ $= 9 + 9 + 5$ $h(-3) = 23$
<p>12. If $g(x) = \sqrt{x+5}$, then $g(-4) = \underline{1}$.</p> $g(-4) = \sqrt{x+5}$ $g(-4) = \sqrt{-4+5}$ $g(-4) = \sqrt{1}$ $g(-4) = 1$	<p>13. If $h(x) = x^2 - 3x + 5$, then $h(0) = \underline{5}$.</p> $h(0) = x^2 - 3x + 5$ $= (0)^2 - 3(0) + 5$ $= 0 - 0 + 5$ $h(0) = 5$	<p>14. If $f(x) = 2x - 1$, then $f(1) = \underline{1}$.</p> $f(1) = 2x - 1$ $f(1) = 2(1) - 1$ $f(1) = 1$
<p>15. $k(x) = 2x + 3$, then $k(0) = \underline{3}$.</p> $k(0) = 2x + 3$ $= 2(0) + 3$ $= 0 + 3$ $k(0) = 3$	<p>16. $k(x) = 3 - x$, then $k(-2) = \underline{5}$.</p> $k(-2) = 3 - x$ $= 3 - (-2)$ $= 3 + 2$ $k(-2) = 5$	<p>17. $k(x) = 2x + 3$, then $k(3) = \underline{9}$.</p> $k(3) = 2x + 3$ $= 2(3) + 3$ $= 6 + 3$ $k(3) = 9$

Typo for #15-17 \Rightarrow use $k(x) = \begin{cases} 2x+3, & \text{if } x > -2 \\ 3-x, & \text{if } x \leq -2 \end{cases}$

Spiral REVIEW—Solving Equations

18. $6x - 3 = 9$

$x = 2$

19. $\frac{x}{2} + 5 = 7$

$x = 4$

20. $\frac{x}{3} - 4 = 2$

$x = 18$

21. $2x + 1 = 5x + 10$

$x = -3$