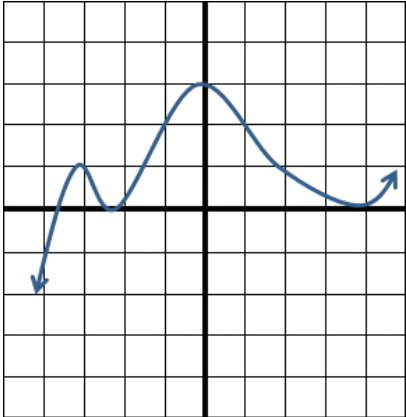



NAME: _____ PERIOD: _____ DATE: _____

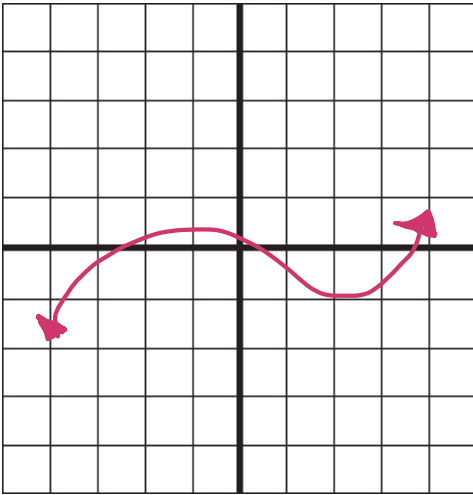
Homework Problem Set

Which relations below are functions? Explain how you know.

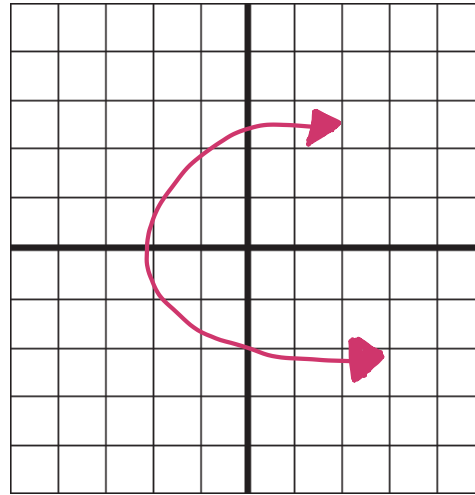
<p>1.</p>  <p>Function * passes vertical line test</p>	<p>2.</p> <p>$\{(1, 2), (1, 3), (2, 3)\}$</p> <p>Not a FUNCTION * There are 2 different output values for the input of 1 $(1, 2)$ $(1, 3)$</p>	<p>3.</p> <p>$y = -2x + 7$</p> <p>FUNCTION It is a linear equation of a non-vertical line. All non-vertical lines are functions.</p>												
<p>4.</p> <p>$\{(1, 2), (3, 3), (2, 3)\}$</p> <p>Function * There are no repeating input values.</p>	<p>5.</p>  <p>NOT A FUNCTION Doesn't pass vertical line test</p>	<p>6.</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>input</th> <th>output</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>3</td> </tr> <tr> <td>2</td> <td>2</td> </tr> <tr> <td>1</td> <td>1</td> </tr> <tr> <td>0</td> <td>0</td> </tr> <tr> <td>-1</td> <td>0</td> </tr> </tbody> </table> <p>FUNCTION No repeating input values</p>	input	output	3	3	2	2	1	1	0	0	-1	0
input	output													
3	3													
2	2													
1	1													
0	0													
-1	0													

Answers will vary.

7. Draw two different graphs – one of which is a function while the other is not a function.



Function



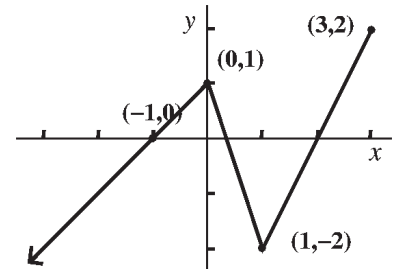
Not a Function

Spiral REVIEW—Reading Graphs

Use the graph of $f(x)$ to determine each of the following. Where applicable, use interval notation.

8. x-intercepts (think... where does it cross x-axis?)

$$(-1, 0) \left(\frac{1}{3}, 0\right) (2, 0)$$



9. y-intercepts (think... where does it cross y-axis?)

$$(0, 1)$$

10. $f(-2) = \underline{-1}$

11. The values of x for which $f(x) = 0$

$$-1, \frac{1}{3}, 2$$

when does $y=0$?
what is the x -value?

Spiral REVIEW—Tables, Graphs, and Equations

Source: adapted from The CUNY HSE Curriculum Framework—Math

Four friends used the same taxi service to meet at a restaurant for dinner. When they arrived at the restaurant, they compared their cab fare and thought that something must be wrong. They tried to figure out a rule that the taxi company used to calculate cost to see who was mischarged.



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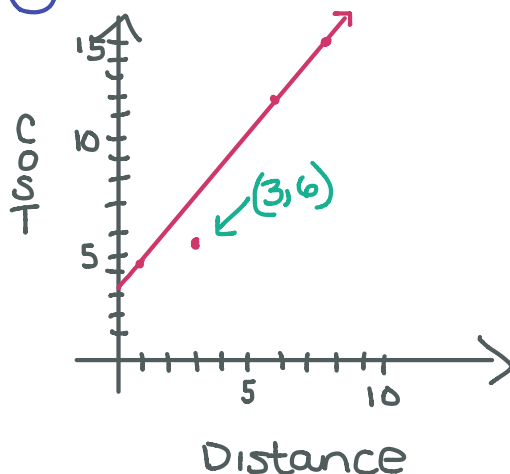
- Denise’s trip was only 1 mile and her total cost was \$4.50.
- Mark said that his trip was 6 miles and his total cost was \$12.00.
- Solange’s trip was 3 miles and her total cost was \$6.00.
- Jamel’s trip was 8 miles and his total cost was \$15.00.

12. Complete the table below for the four passengers.

Passenger	Distance	Cost	Coordinate Point
Denise	1	\$ 4.50	(1, 4.5)
Mark	6	\$ 12.00	(6, 12)
Solange	3	\$ 6.00	(3, 6)
Jamel	8	\$ 15.00	(8, 15)

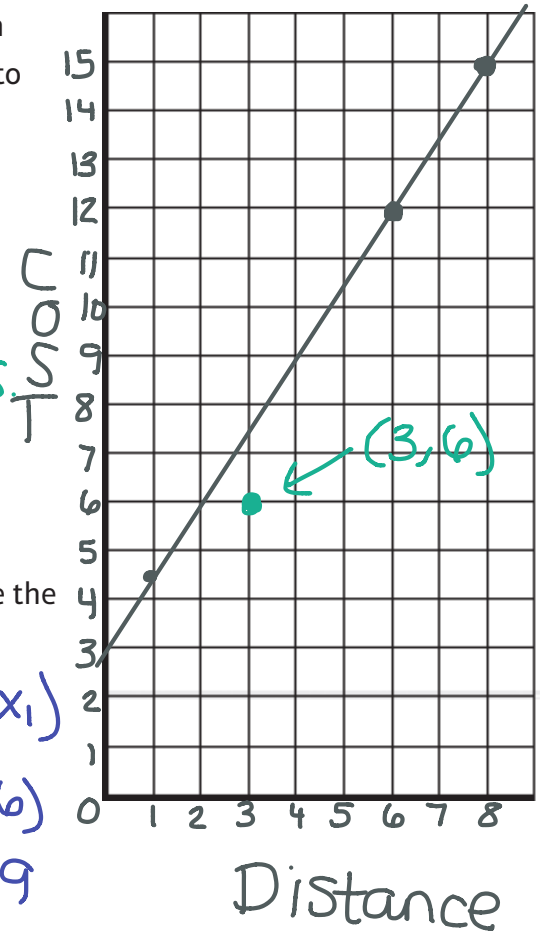
13. Which fare do you believe is incorrect? Why?

Solange was mischarged



14. Use the coordinate points to plot the costs in the graph at the right. Is there one coordinate that doesn't seem to match the others?

yes, the 3 miles for \$6.00 doesn't seem to line up w/ other points.



15. Use the three coordinates that form a line to determine the base charge and the fee for each mile traveled.

$$(6, 12) \quad (8, 15)$$

$$m = \frac{15 - 12}{8 - 6} = \frac{3}{2}$$

$$y - y_1 = m(x - x_1)$$

$$y - 12 = \frac{3}{2}(x - 6)$$

$$y - 12 = \frac{3}{2}x - 9$$

$$y = \frac{3}{2}x + 3$$

Base Charge: \$3
each mile: \$1.50

16. Who was mischarged? What should their charge have been?

Solange was mischarged

$$y = \frac{3}{2}(3) + 3$$

$$y = 4.50 + 3 \Rightarrow y = \$7.50$$

17. What would it cost for someone to travel 10 miles with this taxi service?

$$y = \frac{3}{2}x + 3$$

$$y = \frac{3}{2}(10) + 3$$

\$18 for 10 miles

$$y = 15 + 3$$

$$y = 18$$

18. If it costs someone \$9 for their trip, how many miles did they travel? Explain how you got your answer.

$$y = \frac{3}{2}x + 3$$

$$9 = \frac{3}{2}x + 3$$

$$\left(\frac{2}{3}\right)6 = \frac{\cancel{3}}{2}x \left(\frac{2}{\cancel{3}}\right)$$

$$\boxed{4 = x}$$

you can travel
4 miles for \$9