

Algebra 1 CC
Assignment #34
Non-Proportional Linear Relationships

1. For the linear function $g(x) = 7x - 2$, which of the following is true?

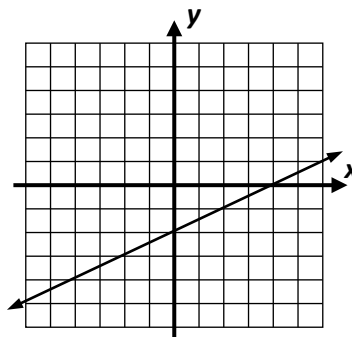
- (1) It has a slope of $7x$ and a y-intercept of -2 .
- (2) It has a slope of -2 and a y-intercept of 7 .
- (3) It has a slope of 7 and a y-intercept of -2 .
- (4) It has a slope of -2 and a y-intercept of $7x$.

2. Which of the following represents the average rate of change of the function $g(x) = \frac{3}{2}x + 1$ over the interval $-2 \leq x \leq 8$?

- (1) $\frac{9}{7}$
- (2) $\frac{5}{4}$
- (3) $\frac{2}{3}$
- (4) $\frac{3}{2}$

3. What is the equation of the line shown in the graph?

- (1) $y = 2x + 4$
- (2) $y = 2x - 2$
- (3) $y = \frac{1}{2}x - 2$
- (4) $y = \frac{1}{2}x + 4$

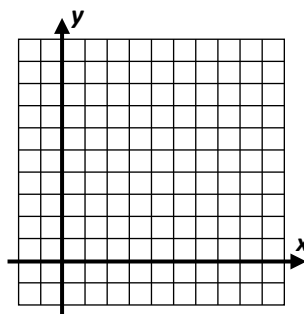


4. Which of the following is the equation of a line whose slope is 3 and which passes through the point $(2, 7)$?

- (1) $y = 3x + 7$
- (2) $y = 7x + 3$
- (3) $y = 3x + 1$
- (4) $y = 7x - 7$

5. Which of the following is the equation of a line that passes through the points $(0, 8)$ and $(6, 4)$? Use of grid is optional.

- (1) $y = -\frac{2}{3}x + 8$
- (2) $y = \frac{3}{2}x + 6$
- (3) $y = -\frac{4}{5}x + 4$
- (4) $y = \frac{1}{2}x + 8$



6. Graph each of the following linear functions on the grid provided and label with their equations. For each, create a table **without** the use of your calculator to maintain **fluency** with operation facts. Show your table. In the first problem, the x -values are given. In others, you will have to choose them. Always include $x = 0$.

(a) $f(x) = 2x + 3$

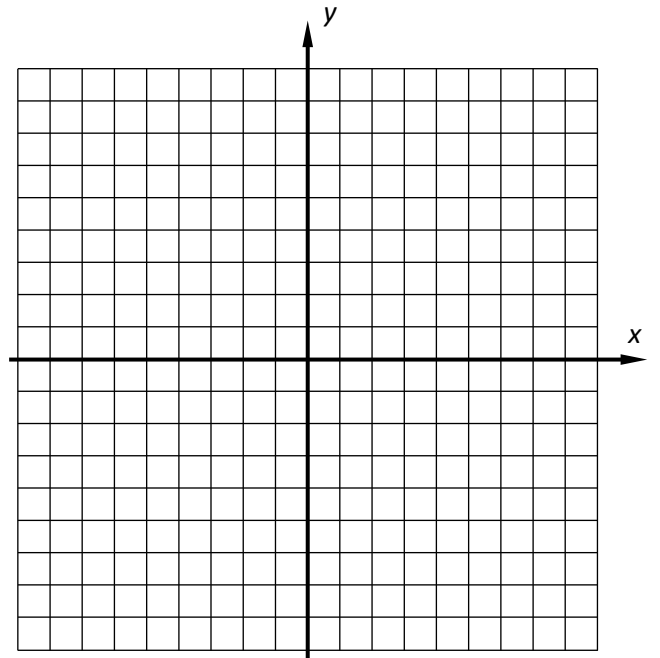
| | | | | | |
|--------|----|----|---|---|---|
| x | -5 | -2 | 0 | 2 | 5 |
| $f(x)$ | | | | | |

(b) $g(x) = -\frac{1}{2}x - 1$

| | | | | | |
|--------|--|--|---|--|--|
| x | | | 0 | | |
| $g(x)$ | | | | | |

(c) $h(x) = 5 - x$

| | | | | | |
|--------|--|--|---|--|--|
| x | | | 0 | | |
| $h(x)$ | | | | | |



R1. Consider the following relationship given by the formula $f(x) = \begin{cases} 3 - 2x & x \leq 1 \\ 2x - 1 & x > 1 \end{cases}$.

- (a) Evaluate each of the following:

$f(5) =$

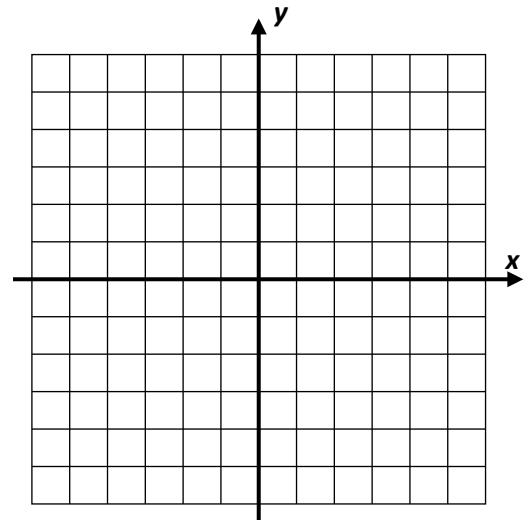
$f(-2) =$

$f(1) =$

- (b) Fill out the table below for the inputs given. Keep in mind which formula you are using.

| x | Rule/Calculation | (x, y) |
|-----|------------------|----------|
| -1 | | |
| 0 | | |
| 1 | | |
| 2 | | |
| | | |

- (c) Graph $y = f(x)$ on the axes below.



1. (3)
2. (4)
3. (3)
4. (3)
5. (1)
6. (a)

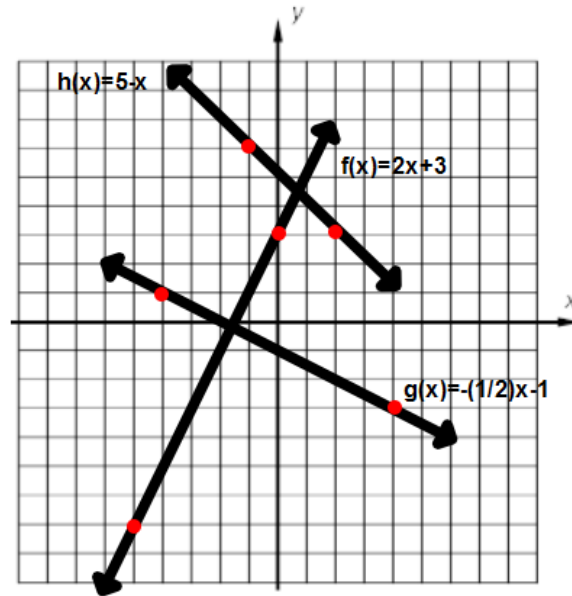
| | | | | | |
|--------|----|----|---|---|----|
| x | -5 | -2 | 0 | 2 | 5 |
| $f(x)$ | -7 | -1 | 3 | 7 | 13 |

(b)

| | | | | | |
|--------|----|----|----|----|----|
| x | -4 | -2 | 0 | 2 | 4 |
| $g(x)$ | 1 | 0 | -1 | -2 | -3 |

(c)

| | | | | | |
|--------|----|----|---|---|---|
| x | -2 | -1 | 0 | 1 | 2 |
| $h(x)$ | 7 | 6 | 5 | 4 | 3 |



R1. (a) $f(5) = 9$ $f(-2) = 7$ $f(1) = 1$

(c)

(b)

| x | (x, y) |
|-----|----------|
| -1 | 5 |
| 0 | 3 |
| 1 | 1 |
| 2 | 3 |
| 3 | 5 |

