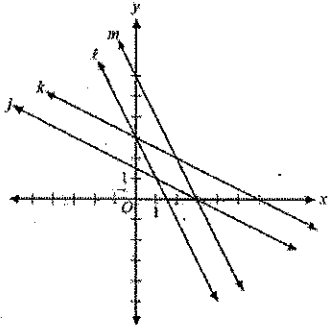


8.EE.6 Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y=mx+b$ for a line through the origin and the equation $y=mx+b$ for a line intercepting the vertical axis at b .

Which line in the figure below has a slope of -2 and a y intercept of 3 ?



- A) ~~j~~
- B) ~~k~~
- C) l
- D) ~~m~~

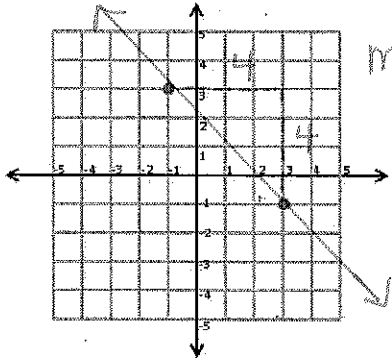
If a line contains the points in the table below, what is its equation?

x	y
-8	-42
-3	-17
0	-2
6	28

- A) $y = -2x + 5$
- B) $y = 2x - 5$
- C) $y = 5x - 2$
- D) $y = -5x - 2$

Handwritten work: $\frac{30}{6} = 5$ (slope), y int. -2

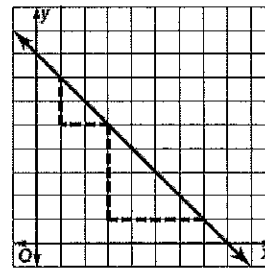
If a line passes through the two points below, what is its equation?



Handwritten work: $m = -\frac{4}{4} = -1$, $b = 2$

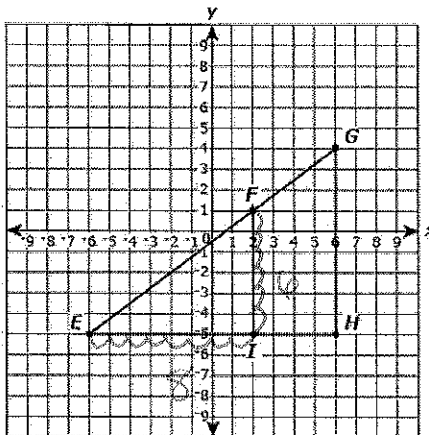
- A) $y = x + 2$
- B) $y = -x + 2$
- C) $y = 2x - 1$
- D) $y = 2x + 1$

Which of the following statements is NOT true concerning the graph below?



- A) The simplified ratio of the vertical side length to the horizontal side length of each triangle is 1.
- B) The slope of the line is 1
- C) The slope of the line is -1
- D) The smaller triangle and the larger triangle are similar.

Triangle EGH is graphed on a coordinate grid.



Part A: Use the Pythagorean Theorem to find the length of side \overline{EF} . Show your work.

Handwritten work: $9^2 + 6^2 = c^2$, $6^2 + 8^2 = c^2$, $36 + 64 = c^2$, $100 = c^2$, $c^2 = 100$, $c = \sqrt{100}$, $c = 10$

Part B: What is the slope of the line containing \overline{EF} ? What is the slope of the line containing \overline{EG} ? Explain the relationship between the slopes of \overline{EF} and \overline{EG} .

Handwritten work: $EF = \frac{6}{8} = \frac{3}{4}$, $EG = \frac{9}{12} = \frac{3}{4}$

Part C: Write an equation to represent the line that passes through points E and G. If $x=12$, in the equation you wrote, what is the value of y ? Show your work.

Handwritten work: $m = \frac{b}{a} = \frac{3}{4}$, y int. = $-.5$

Handwritten work: $y = \frac{3}{4}x - .5$

Handwritten work: $y = \frac{3}{4}(\frac{12}{1}) - .5$

Handwritten work: $y = 9 - .5 = 8.5$