

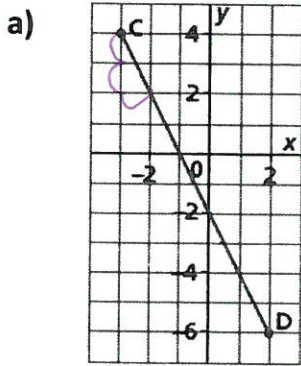
Key

Chapter 6 Practice Test Linear Functions

Name: _____

Date: _____

1. Determine the slope of each line. (2 marks each)



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

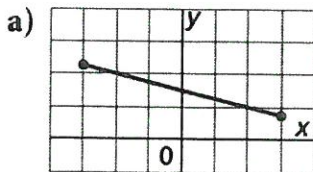
b) Line AB which passes through points A(3, -3) and B(7, -1).

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

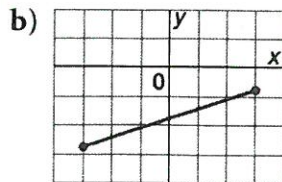
2. Are the lines in question 1 parallel, perpendicular, or neither? Justify your answer. (2 marks)

perpendicular b/c opposite reciprocals

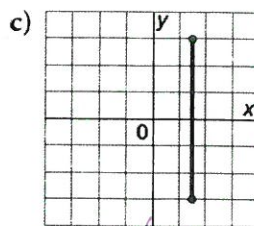
3. For each line segment, is its slope positive, negative, zero, or undefined? (2 marks)



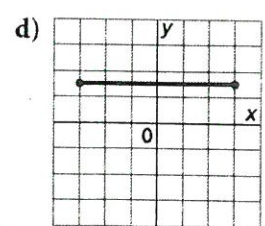
neg



pos



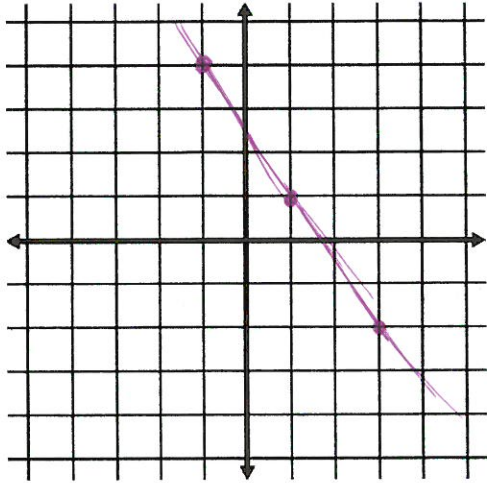
undefined



zero

4. A line passes through $(-1, 4)$ and has a slope of $-\frac{3}{2}$.

a) Sketch the line. (2 marks)



b) Write the coordinates of another point on this same line. (1 mark)

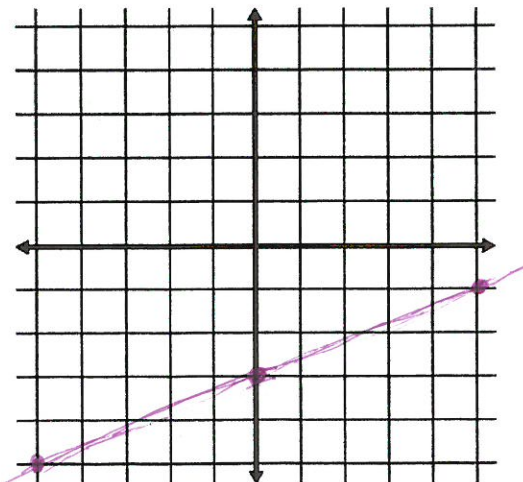
$(1, 1)$ or $(3, -2)$

5. Two lines have slopes of $\frac{4}{5}$ and $\frac{5}{4}$. Are they parallel, perpendicular, or neither?

Explain. (2 marks)

neither,
they are reciprocals
but not opposite
signs
(perp. needs
opposite
reciprocals)

6. Graph the line $y = \frac{2}{5}x - 3$. (2 marks)



7. Name the **form** of the equations below. (1 mark)

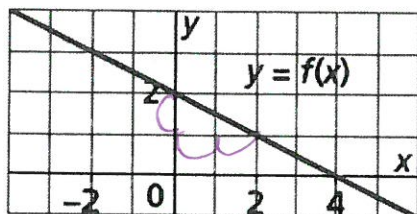
a) $3x + 2y - 18 = 0$

General

b) $\frac{2}{5}x + y = -3$

slope intercept
(but out of order)

8. Write the equation of the line below in Slope-Intercept form. (3 marks)



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

9. Write an equation for the line below in Slope-Point form. (4 marks)

(b) A line that passes through $Q(-4, 7)$ and $R(5, -2)$

slope: $\frac{-2 - (7)}{5 - (-4)} = \frac{-9}{9} = -1$

$y - y_1 = m(x - x_1)$
 $y - 7 = -1(x + 4)$ or $y + 2 = -1(x - 5)$

10. Write the equation of the line below in Slope-Point form. (4 marks)

(c) The line that passes through $(1, -1)$ and is perpendicular to the line $y = \frac{2}{3}x - 5$.

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

↑
opp recip

11. Match the equations to the graphs below, by writing the letter on the line. (4 marks)

$$y = -\frac{4}{5}x + 4$$

A

$$y = \frac{1}{2}x - 4$$

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

B

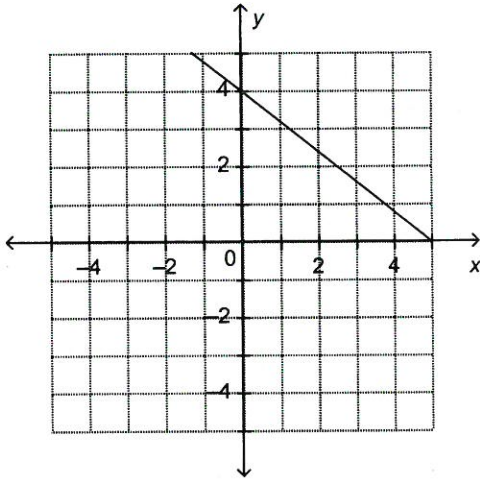
$$(y + 4) = \frac{4}{5}(x - 0)$$

C

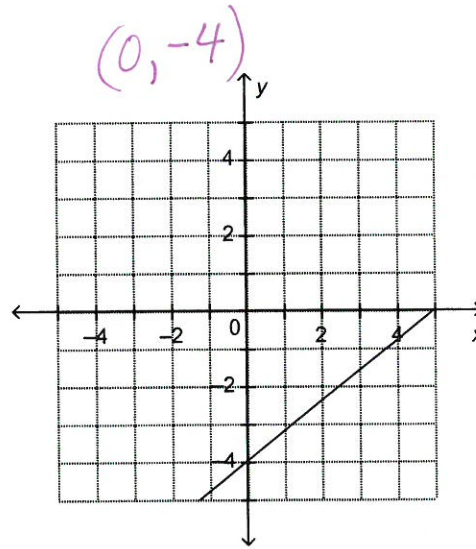
$$(y - 1) = -1(x - 2)$$

D (2, 1)

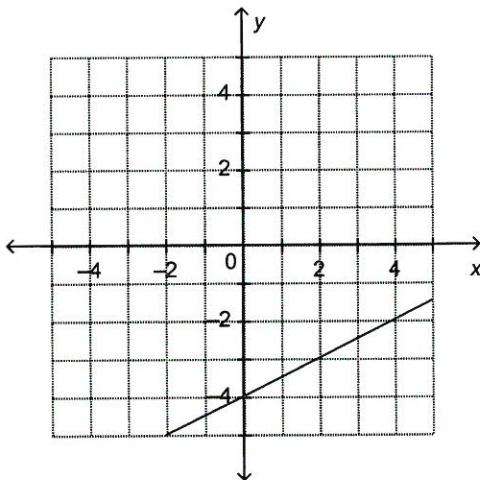
a)



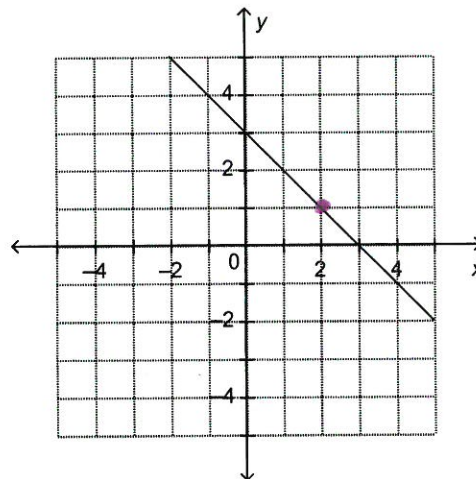
c)



b)



d)



12. Stephen has designed a new app that will calculate any math question on the face of the planet. He spends \$800 of his own money designing the app, but he knows it will be worth it in the end. He puts it on the app store for \$6.

- a) Write out the equation in Slope-Intercept form that represents Stephen's financial situation (how to calculate his profit) when he goes to sell the app. (2 marks)

$$y = 6x - 800$$

- b) How much money would Stephen make if he sold an app to each of the 530 students at Sheldon-Williams. (2 marks)

$$\begin{aligned} y &= 6(530) - 800 \\ y &= 3180 - 800 \\ y &= 2380 \end{aligned}$$

- c) How many apps would Stephen have to sell to break even (0 profit) on his original investment? (2 marks)

$$\begin{aligned} 0 &= 6x - 800 \\ 800 &= 6x \\ 133.\overline{33} &= x \end{aligned}$$

Needs to sell at least 134 apps

- d) Determine the x- and y-intercepts of the line representing Stephen's sales. (2 marks)

$$x \text{ int} = 133.\overline{33}$$

$$y \text{ int} = -800 \text{ from equation}$$

e) Graph the line that represents Stephen's sales. (4 marks)

$$y = 6x - 800$$

