

Ch.6 Linear Functions PRACTICE Test

Name: _____

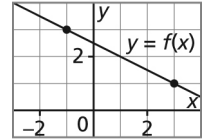
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MULTIPLE CHOICE: Circle the correct answer: A, B, C, or D. **For full marks, justify your answer.**

(2 marks each)

1). What is the slope of this line on the right ?

- A. -2 B. $-\frac{1}{2}$ C. $\frac{1}{2}$ D. 2

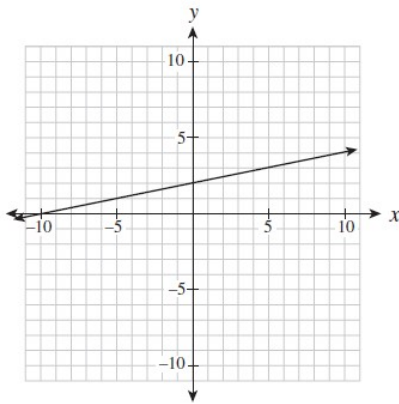


2). Which equation is **not** equivalent to the others?

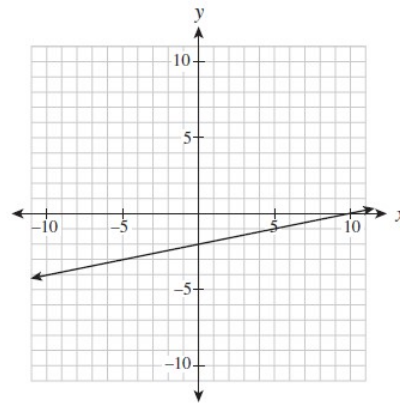
- A. $y - 8 = -\frac{3}{2}(x + 8)$ B. $y = -\frac{3}{2}x + 4$ C. $3x + 2y - 8 = 0$ D. $y + 2 = -\frac{3}{2}(x - 4)$

3). Which graph represents the relation $x - 5y + 10 = 0$?

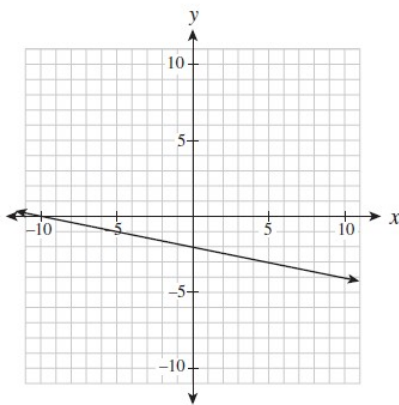
A.



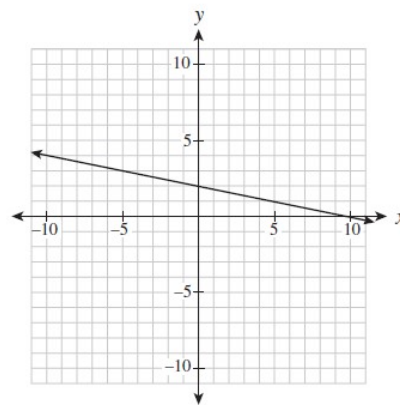
B.



C.

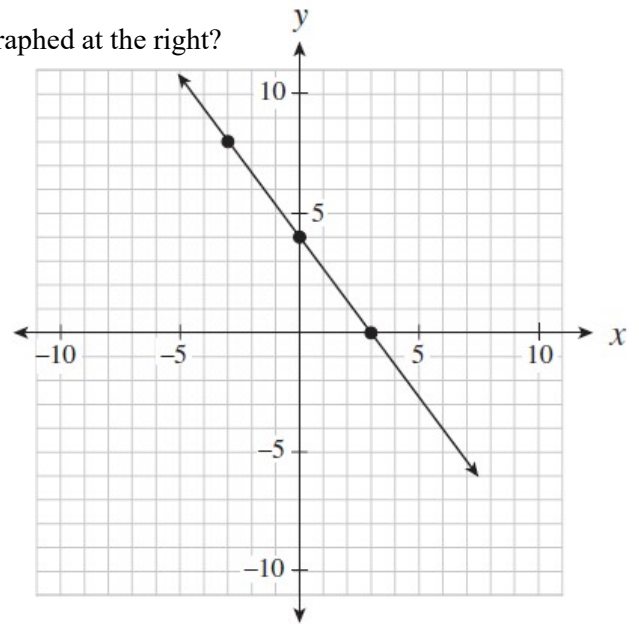


D.



4). Which of the following equations describes the linear relation graphed at the right?

I.	$y = \frac{4}{3}x + 4$
II.	$y - 8 = -\frac{4}{3}(x + 3)$
III.	$4x + 3y - 12 = 0$



- A). II only
- B). I and II only
- C). I and III only
- D). II and III only

5). Determine the equation of a line, in slope-intercept form, that passes through the points $(6,1)$ and $(-10,9)$.

- A). $y = -\frac{1}{2}x + 4$
- B). $y = -\frac{1}{2}x - 2$
- C). $y = -2x + 8$
- D). $y = -2x + 13$

6). Which of the following relations could be produced by $y = \frac{2}{5}x - 6$?

- A). I only
- B). II only
- C). I and II only
- D). I, II, and III

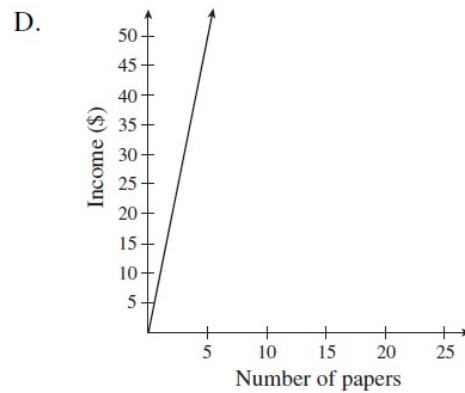
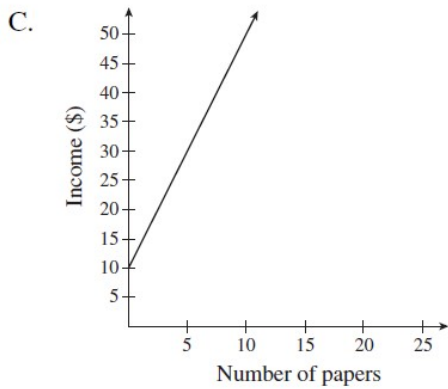
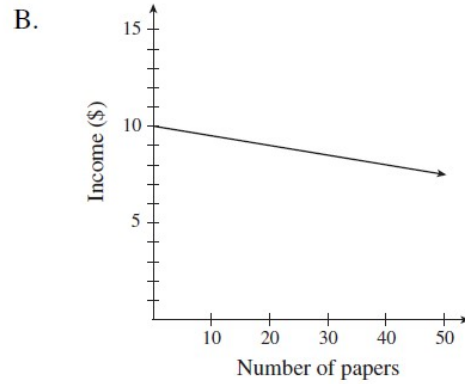
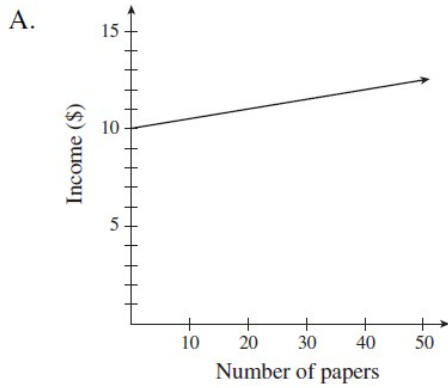
I.	$2x - 5y - 30 = 0$
II.	$\{(15, 0), (10, -2), (-5, -8), (-10, -10)\}$
III.	

7). A line with an undefined slope passes through the points $(-2,1)$ and (p,q) .

Which of the following points could be (p,q) ?

- A). $(1,0)$
- B). $(0,1)$
- C). $(0,-2)$
- D). $(-2,0)$

- 8). Jim delivers newspapers. He gets paid 10 dollars for every day of work, plus 5 cents for every paper he delivers. Which of the following graphs best represents Jim's possible income for one day?



- 9). Determine the slope of the linear relation $3x + 5y + 15 = 0$.

- A). $\frac{5}{3}$
 B). $\frac{3}{5}$
 C). $-\frac{3}{5}$
 D). $-\frac{5}{3}$

- 10). Which of the following coordinates are intercepts of the linear relation $2x - 3y + 30 = 0$?

I.	$(0, 10)$
II.	$(0, \frac{2}{3})$
III.	$(-10, 0)$
IV.	$(-15, 0)$

- A). I only
 B). I and IV only
 C). II and III only
 D). II and IV only

11). Kelly explained her method for graphing the linear relation $y = -\frac{2}{3}x + 7$ as follows:

Steps	
I.	Place a dot on the y-axis at positive 7.
II.	Move up two on the y-axis to positive 9.
III.	From the positive 9, move to the left three spots and place a dot there.
IV.	Draw a line through the two dots.

Where did Kelly make the first mistake, if any, in her explanation?

- A). Step I
- B). Step II
- C). Step III
- D). There is no mistake.

12). Alex bought 144 bagels for \$80. His profit was \$75 once he had sold 100 bagels.

Which equation below represents Alex's profit P , as a function of the number sold, n ?

- A). $P = -0.05n + 80$
- B). $P = 0.05n - 80$
- C). $P = 0.75n$
- D). $P = 1.55n - 80$

13). Determine the slope-intercept equation of the line that is parallel to $y = \frac{2}{5}x - 3$ and passes through the point $(0, 5)$.

- A). $y = -\frac{5}{2}x - 3$
- B). $y = -\frac{5}{2}x + 5$
- C). $y = \frac{2}{5}x + 3$
- D). $y = \frac{2}{5}x + 5$

14). Lines A and B are perpendicular and have a same x-intercept. The equation of line A is $x + 2y - 4 = 0$.

Determine the y-intercept of line B.

- A). -8
- B). -2
- C). 4
- D). 8

15). The cost to insure jewellery is a fixed amount plus a percentage of the value of the jewellery.

- It costs \$32 to insure \$1000 worth of jewellery, or
- It costs \$44.50 to insure \$3500 worth of jewellery.

What is the fixed amount to insure jewellery?

- A). \$27.00
- B). \$31.25
- C). \$44.65
- D). \$58.82

WRITTEN RESPONSE: Show all your work.

16).

a) Determine the slope of each line.

i) a line that passes through A(-4, 7) and B(6, 3)

ii) a line described by the equation $5x - 2y + 7 = 0$

b) Are the lines in part a parallel, perpendicular, or neither? Justify your answer.

17).

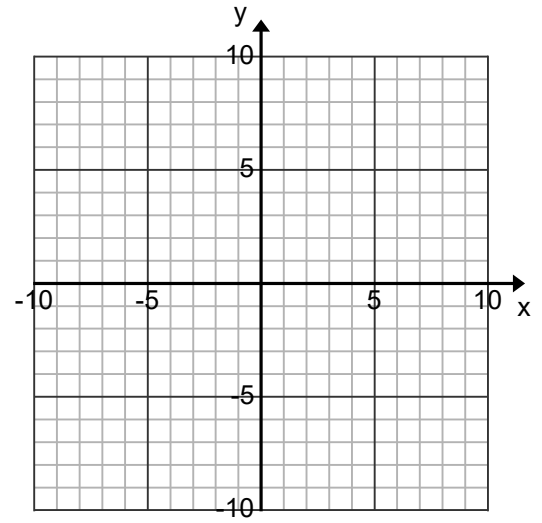
a) Write an equation for the line that passes through E(4, -3) and is parallel to the line $y + 1 = \frac{5}{7}(x - 4)$.

Write the equation in general form.

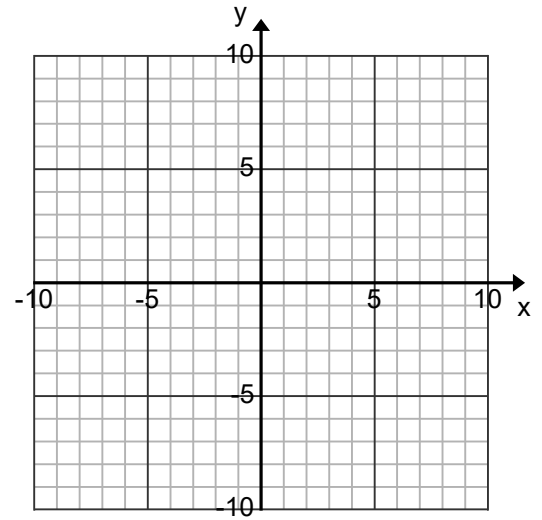
b) Write an equation for a line with x-intercept -3 and y-intercept 5. Explain your strategy.

18). Graph each equation. Describe the strategies you used.

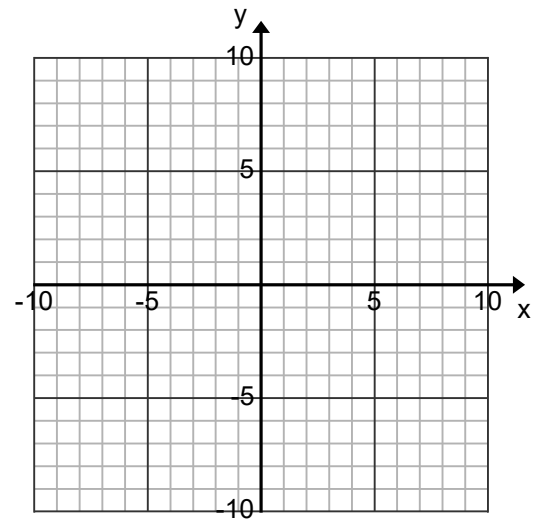
a) $y - 2 = -2(x + 3)$



b) $2x - 5y + 10 = 0$



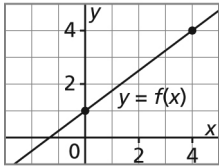
c) $y = -\frac{3}{5}x - 2$



19).

a) Write an equation for each graph. Describe or show your strategy.

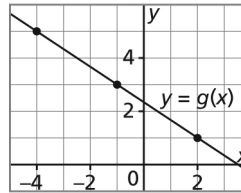
i)



b) Write the above equation in part a) in general form.

c) Use a point on the line to verify each equation.

ii)



b) Write the above equation in part a) in slope-point form or slope-intercept (whichever form is not shown in part a).

c) Use a point on the line to verify each equation.

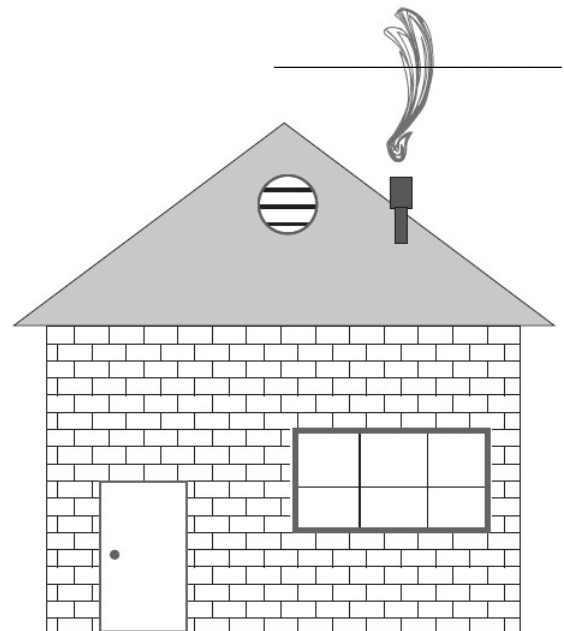
20). Josie started a part-time job when she was 16. She had opened a saving account a few years earlier and had already some money in the account. Each month, she put a fixed amount into her savings account. After 4 months, Josie had \$770 in her savings account. After one year, she had \$1450 in her savings account.

a) Write an equation to describe this relation. Write your equation in slope-intercept form.

b) How much money will Josie have after 2 years?

c) How long will it be until Josie has \$4000 in her savings account?

21). Use a ruler to determine the slope of the roof shown below.
 State the slope as both a fraction & as a decimal.
 (3 marks)



Slope as a fraction _____

Slope as a decimal _____

Note: This diagram is drawn to scale.