Math 1201 Chapter 5: Relations and Functions **Midterm Review**

1. Canadian cities that currently have NHL hockey teams can be associated with the year in which they entered the league. Consider the relation represented by this table.

City	Year of Entry
Calgary	1980
Edmonton	1979
Montreal	1917
Ottawa	1992
Toronto	1917
Vancouver	1970

Which ordered pair belongs to this relation?

a. (Toronto, 1917) b. (Ottawa, 1917)

c. (Edmonton, 1980) d. (Calgary, Alberta)

2. Which set of ordered pairs does <u>not</u> represent a function?

a. { (2, 5), (3, 8), (4, 11), (2, – 1) } b. { (4, 6), (5, – 7), (7, 9), (8, – 10) }

c. { (– 3, – 8), (– 1, – 6), (– 2, 5), (0, 7) } d. { (7,0), (4, – 1), (– 6, 5), (– 8, 0) }

3. Identify the domain of this relation { (8, 10), (5, 7), (9, – 11), (6, – 8) }.

a. {– 8, 7, 9, 10} b. {5,6,8,9}
c. { – 11, – 8, 7, 10} d. {5, 6, 9, 10}

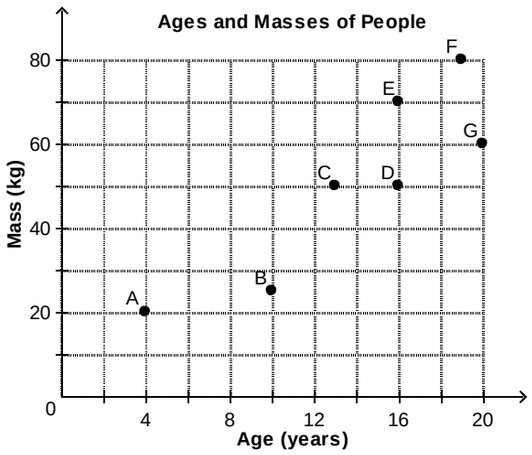
4. For the function $f(x) = -3x + 8$, determine $f(-2)$.

a. 7 b. 2 c. 14 d. 3

5. For the function $f(x) = -3x + 8$, determine x when $f(x) = -25$.

a. 83 b. – 67 c. 11 d. – 11

6. Each point on this graph represents a person. Which two people are the same age?



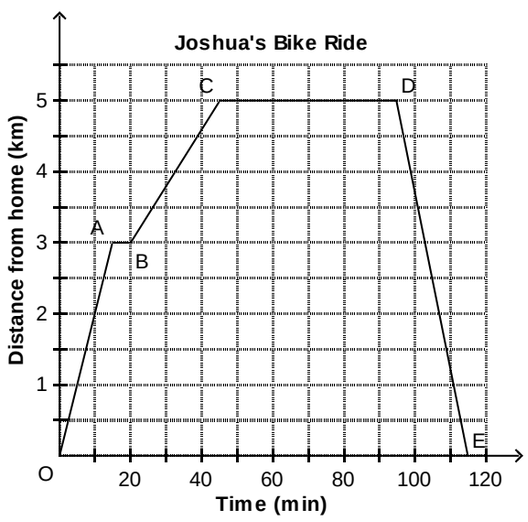
a. E and F

b. C and D

c. D and E

d. B and C

7. Joshua went on a bike ride. Which statement best describes what is happening for line segment DE in this graph?



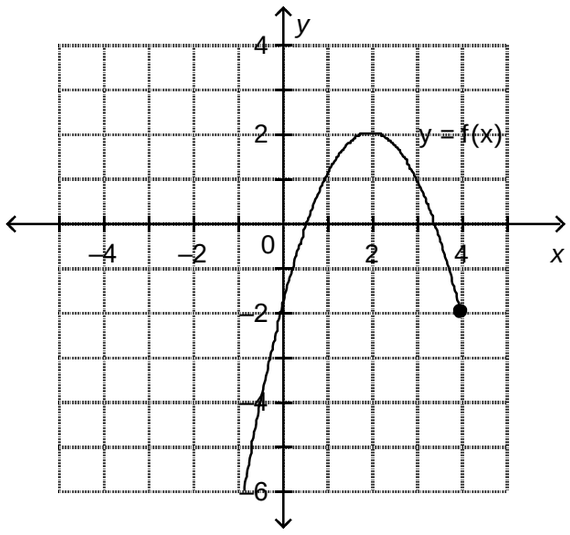
a. Joshua spends time at the park.

b. Joshua leaves home.

c. Joshua cycles to the park.

d. Joshua returns home.

8. Determine the domain of the graph of this function.



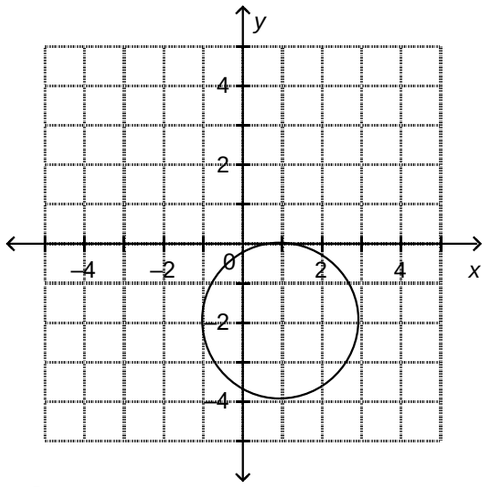
a. $\{x / -1 \le x \le 4,\ x \in R\}$

b. $\{x / 2 \le x \le 4,\ x \in R\}$

c. $\{x / x \le 2,\ x \in R\}$

d. $\{x / x \le 4,\ x \in R\}$

9. Determine the range of the graph.



a. [-1,3]

b. [-4,0]

c. [-0.5,3.5]

d. [-1,4]

10. Which table of values represents a linear relation?

a.

Distance (m)	0	5	10	15	20
Time (s)	0	1	2	3	4

b.

Time (s)	0	3	6	9	12
Distance (m)	0	10	22	36	52

c.

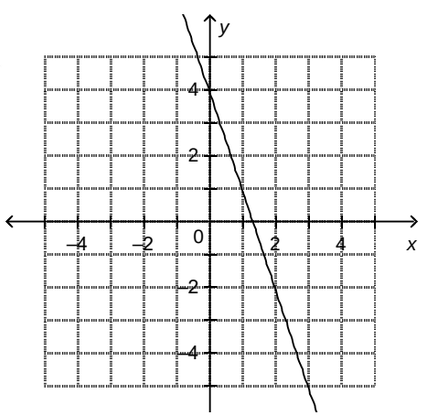
Time (s)	0	1	2	3	4
Speed (m/s)	0	1	2	4	8

d.

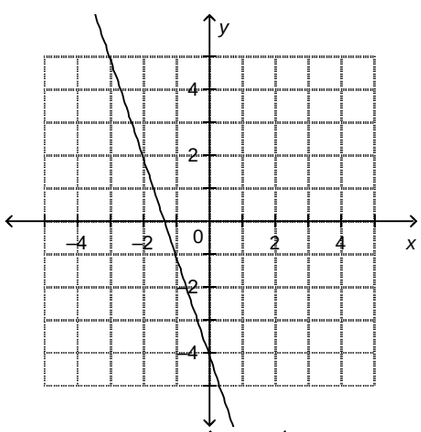
Distance (m)	0	4	16	36	64
Speed (m/s)	0	2	4	6	8

11. Which graph represents the linear function $f(x) = -3x + 4$?

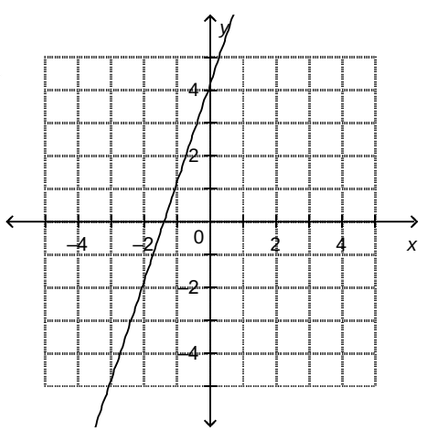
a.



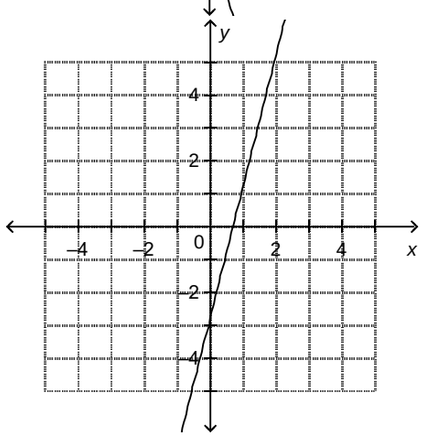
b.



c.



d.



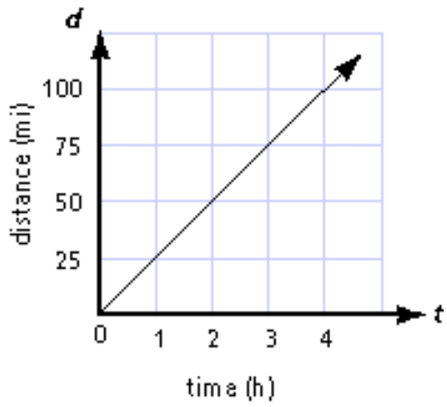
12. What is the rate of change in the graph showing the relationship between distance and time?

a. 0.04 mi/h

b. 4 mi/h

c. 25 mi/h

d. 100 mi/h



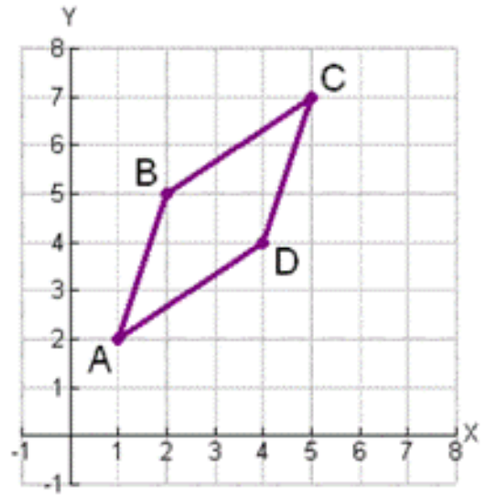
13. The equation $C = 11g + 250$ represents the total cost, C dollars, for a sports banquet when g people attend.

a. Write the function in function notation.

b. Determine $C(46)$. What does this number represent?

c. Determine the value of g when $C(g) = 1581$. What does this number represent?

14. Reggie says ABCD is a parallelogram.
Ann says ABCD is a not a parallelogram.
Who is correct? Justify your answer.



15. Francine runs a T-shirt company. For each order she receives, Francine charges a flat fee of $50, plus $8.95 per T-shirt.

a. Write an equation for the total cost, C dollars, for ordering n T-shirts.

b. Marcel ordered 62 T-shirts. What was the total cost?

c. Jacob paid a total cost of $971.85. How many T-shirts did he order?

16. Refer to the function $f(x) = 2x - 4$.

a. Without graphing,
determine the y-intercept of the function.

b. Without graphing,
determine the x-intercept of the function.

c. Using the x and y intercepts,
sketch a graph of the function.