

M10 - Chapter 5 Test *\* PRACTICE TEST \**

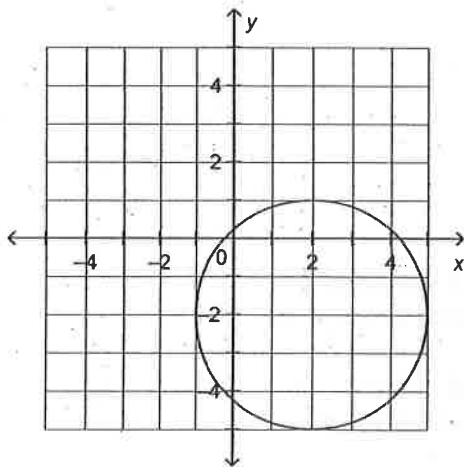
/20 Multiple Choice: Choose the BEST answer. Record your answer on the line.

1. Which set of ordered pairs does not represent a function?

- i)  $\{(1,4), (2,7), (3,10), (1,-2)\}$
- ii)  $\{(3,5), (4,-6), (6,8), (7,-9)\}$
- iii)  $\{(-4,-7), (-2,-5), (-3,4), (-1,6)\}$
- iv)  $\{(6,0), (3,-2), (-5,4), (-7,0)\}$

- a. i                      b. iii                      c. ii                      d. iv

2. Determine the range of the graph.



- a.  $-5 \leq y \leq 1$
- b.  $-5 \leq y \leq 5$
- c.  $-1 \leq x \leq 5$
- d.  $-1 \leq y \leq 1$

3. For a service call, an electrician charges a \$50 flat fee, plus \$40 for every 30 min worked. Determine the rate of change of this linear relation.

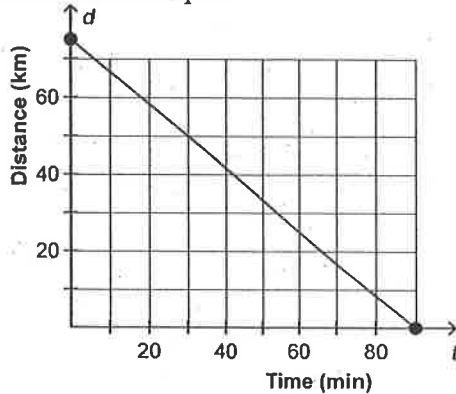
- a. \$80/h
- b. \$40/h
- c. \$90/h
- d. \$50/h

4. Which set of ordered pairs represents a **linear** relation?

- i)  $\{(1, 7), (2, 5), (3, 3), (4, 1), (5, -1)\}$   
 ii)  $\{(2, 5), (3, 7), (4, 9), (5, 10), (6, 11)\}$   
 iii)  $\{(-3, 9), (-2, 4), (-1, 1), (0, 0), (1, 1)\}$   
 iv)  $\{(-1, 3), (9, 2), (-3, 1), (10, 0), (-1, -1)\}$

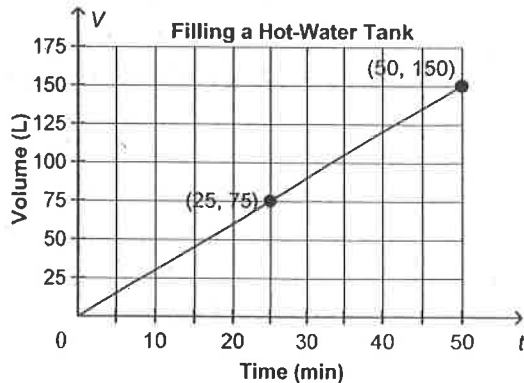
- a. iii  
 b. iv  
 c. i  
 d. ii

5. This graph shows distance,  $d$  kilometres, as a function of time,  $t$  minutes. Determine the vertical and horizontal intercepts.



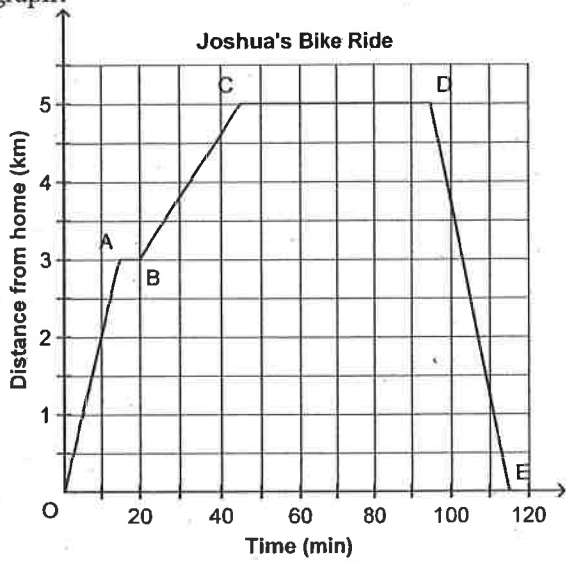
- a. Vertical intercept: 75  
 Horizontal intercept: 90  
 b. Vertical intercept: 60  
 Horizontal intercept: 90  
 c. Vertical intercept: 75  
 Horizontal intercept: 60  
 d. Vertical intercept: 90  
 Horizontal intercept: 75

6. This graph represents a 150-L hot-water tank being filled at a constant rate. Determine the rate of change of the relation.



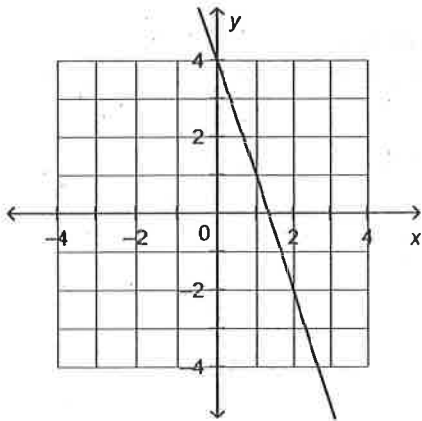
- a. 3 L/min  
 b. 75 L/min  
 c. 0.33 L/min  
 d. 25 L/min

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

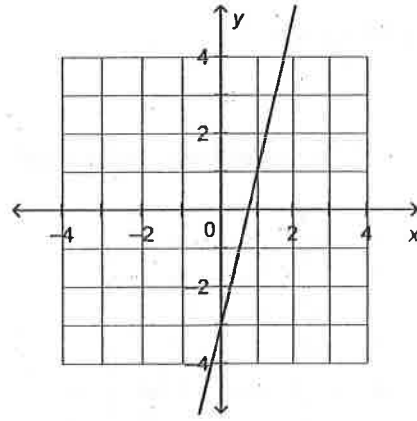


- Joshua leaves home.
  - Joshua cycles to the park.
  - Joshua spends time at the park.
  - Joshua returns home.
8. Which graph represents the linear function  $f(x) = -3x + 4$ ?

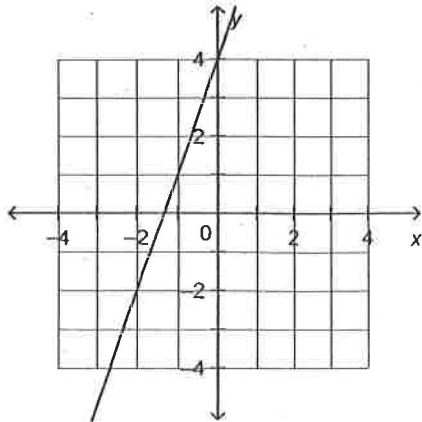
a.



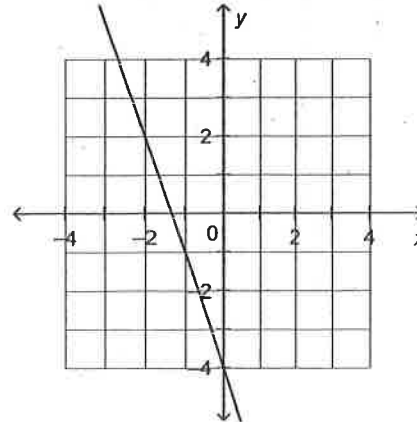
c.



b.



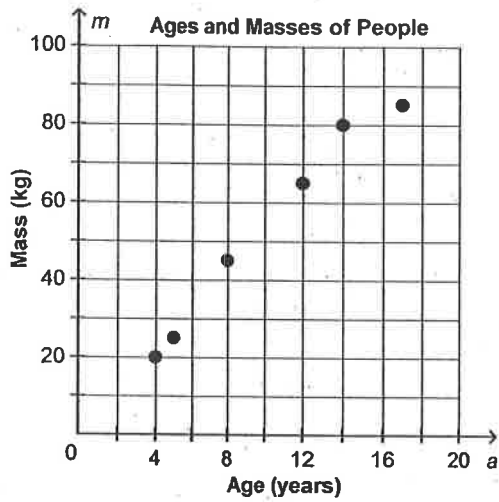
d.



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9. This graph shows the masses of people,  $m$ , as a function of age,  $a$ . Determine the range of the graph.



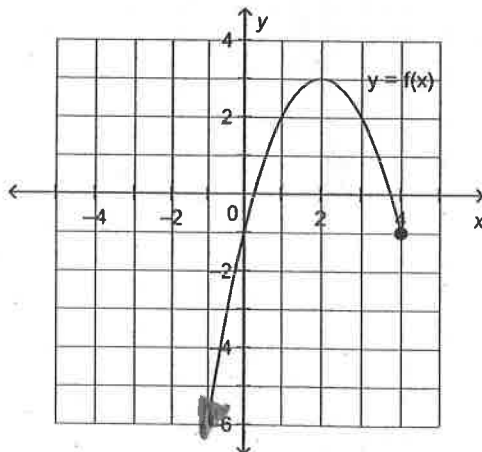
- a.  $\{4, 5, 8, 12, 14, 17\}$                       c.  $\{15, 25, 45, 55, 80, 85\}$   
b.  $\{20, 25, 45, 65, 80, 85\}$                 d.  $\{3, 5, 8, 10, 14, 17\}$

10. Identify the domain of this relation.

$$\{(10, 12), (7, 9), (11, -13), (8, -10)\}$$

- a.  $\{-13, -10, 9, 12\}$                               c.  $\{7, 8, 10, 11\}$   
b.  $\{-10, 9, 11, 12\}$                               d.  $\{7, 8, 11, 12\}$

11. Determine the domain and range of the graph of this function.



- a.  $2 \leq x \leq 4; y \leq 3$                               c.  $x \leq 3; y \leq 4$   
b.  $x \leq 4; y \leq 3$                                       d.  $x \leq 4; -1 \leq y \leq 3$

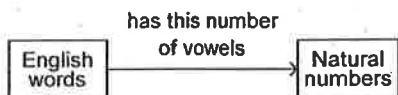
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12. For the function  $g(x) = 2x - 9$ , determine  $g(8.9)$ .

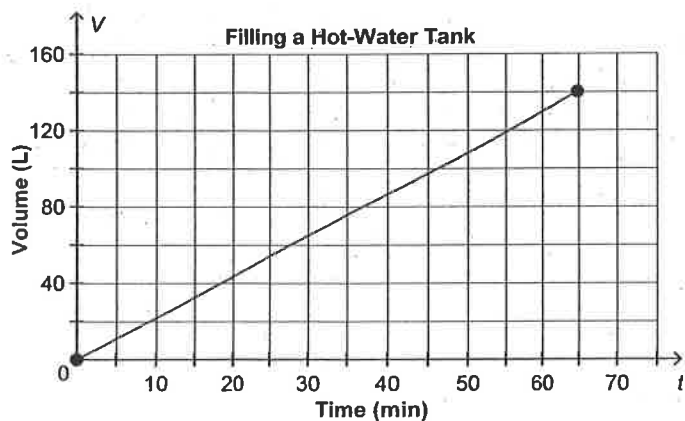
- a. 8.95                      b. 1.9                      c. -8.8                      d. 8.8

13. Which ordered pair belongs to the relation shown in the diagram below?



- a. (mathematics, 2)                      c. (relation, 4)  
b. (arrow, 3)                      d. (function, 1)

14. This graph represents the time it takes to fill a 140-L hot-water tank. Determine the volume of water in the tank after 50 min.



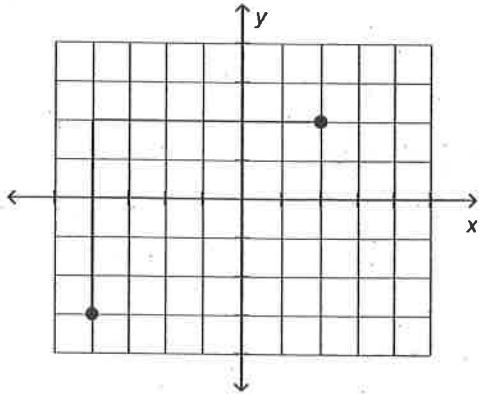
- a. about 108 L                      c. about 97 L  
b. about 23 L                      d. about 119 L

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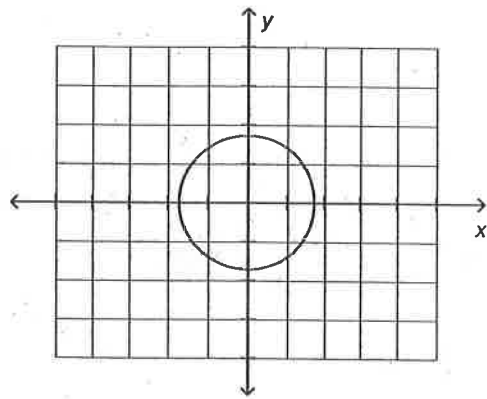
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15. Which of these graphs represents a function?

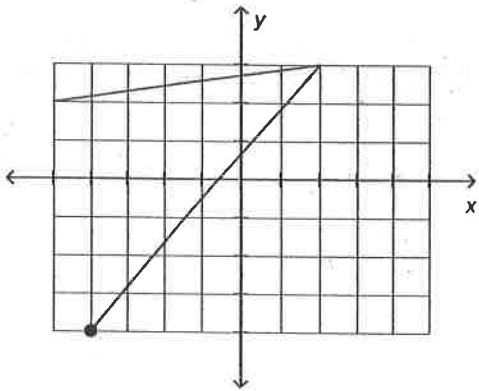
i)



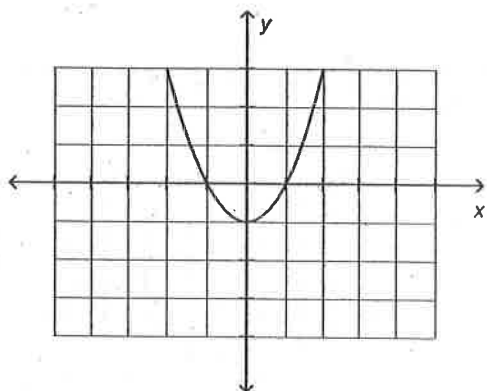
ii)



iii)



iv)



a. iv

b. ii

c. i

d. iii

16. Which equation does not represent a linear relation?

i)  $y = x^2 - 10$

ii)  $x = -4$

iii)  $y = -2x + 10$

iv)  $6x + 7y = 7$

a. i

b. iv

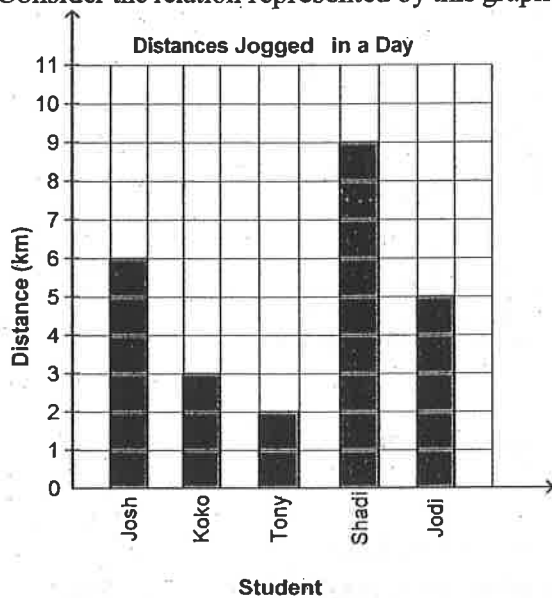
c. ii

d. iii

17. For the function  $g(x) = 2x - 9$ , determine  $x$  when  $g(x) = -19$ .

- a. -5                      b. -14                      c. 14                      d. -47

18. Consider the relation represented by this graph. Represent the relation as a set of ordered pairs.

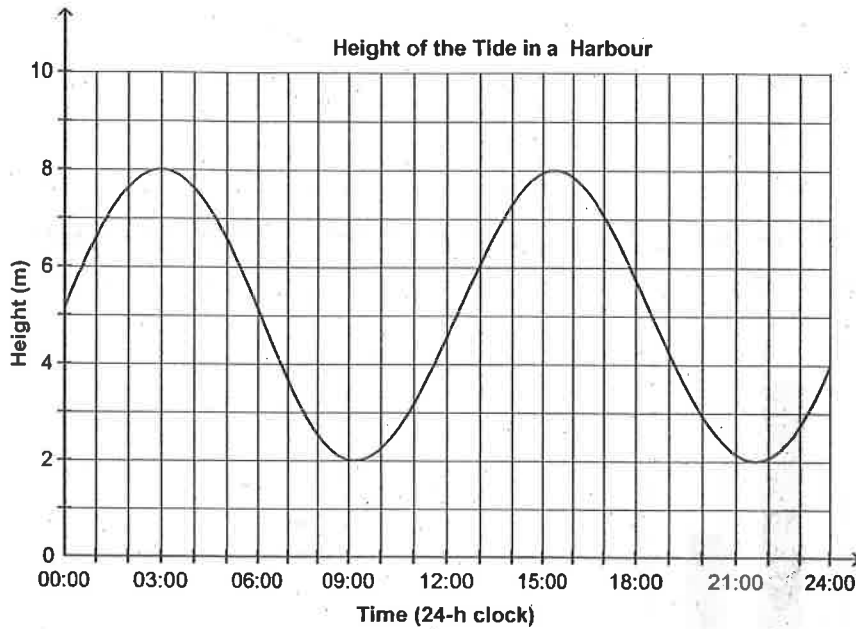


- a.  $\{(6, \text{Josh}), (3, \text{Koko}), (2, \text{Tony}), (9, \text{Shadi}), (5, \text{Jodi})\}$   
b.  $\{(6, \text{Josh}), (3, \text{Koko}), (2, \text{Tony}), (9, \text{Shadi}), (5, \text{Jodi})\}$   
c.  $\{(\text{Josh}, 6), (\text{Koko}, 3), (\text{Tony}, 2), (\text{Shadi}, 5), (\text{Jodi}, 9)\}$   
d.  $\{(\text{Josh}, 6), (\text{Koko}, 3), (\text{Tony}, 2), (\text{Shadi}, 9), (\text{Jodi}, 5)\}$

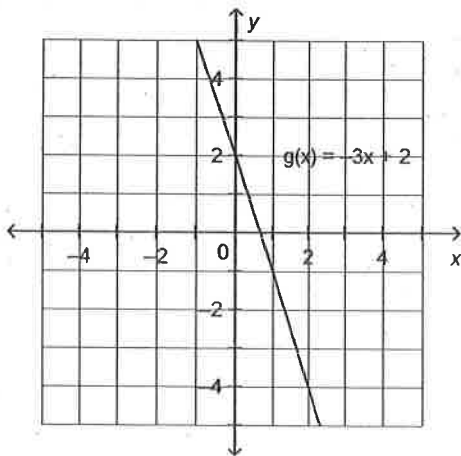
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19. This graph shows the height of the tide in a harbour as a function of time in one day. At about what time in the morning does the least height occur?



- a. About 10:00 a.m.                      c. About 2:00 a.m.  
b. About 9:00 a.m.                      d. About 3:00 a.m.
20. This is a graph of the function  $g(x) = -3x + 2$ . Determine the domain value when the range value is 2.



- a. 0                      b. -4                      c. -2.5                      d. -1

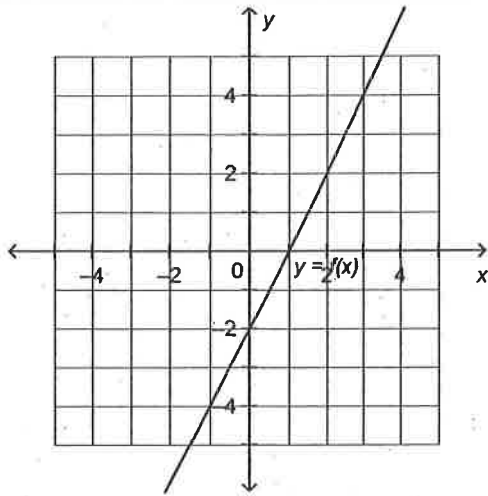


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Written Response: SHOW ALL WORK! REMEMBER UNITS!

21. Determine the vertical and horizontal intercepts of this graph. (2 marks)



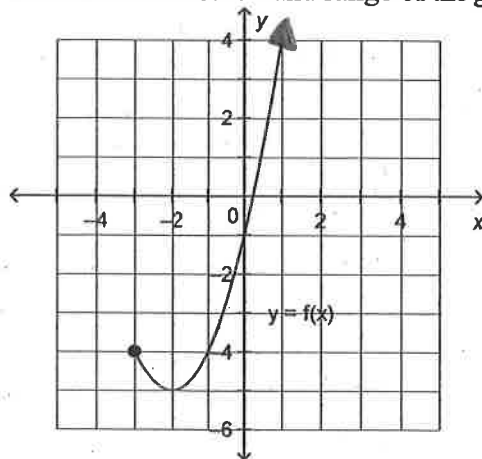
Horizontal intercept:

Vertical intercept:

22. For the function  $f(x) = 4x - 1$ , determine  $f(-5.5)$ . (2 marks)

Answer: \_\_\_\_\_

23. Determine the domain and range of the graph of this function. (2 marks)



Domain:

Range:

24. Consider the relation represented by this set of ordered pairs.  $\{(5,2), (6,7), (7,3), (6,1), (8,0)\}$
- a) Represent this relation as an arrow diagram. (1 mark)

b) Is this relation a FUNCTION (1 mark)? (circle) YES NO

25. Suppose you were to graph the data in this table of values. Would you join the points? **Justify your answer.** (2 marks)

Number of Pop Bottles, $n$	Refund, $r$ (\$)
5	1.00
12	2.40
17	3.40
24	4.80
30	6.00

26. The equation  $C = 15n + 250$  represents the total cost,  $C$  dollars, for a sports banquet when  $n$  people attend. (5 marks)

a) Write the function in **function notation**.

b) Determine  $C(31)$ .

c) What does this number (*your ANSWER to question b*) represent?

d) Determine the value of  $n$  when  $C(n) = 955$ .

e) What does this value of  $n$  (*your ANSWER to question d*) represent?

27. A company rents paddle boats by the day. This table shows the total cost of **renting a paddle boat for different numbers of days**. (5 marks)

Number of Days "n"	Total Cost "C" (\$)
1	\$79
3	\$127
5	\$175
7	\$223

a) State the independent variable:

b) State the dependent variable:

c) Does this table of values represent a linear relation? Y / N

d) Determine the **rate of change** of this relation.

e) What does this rate of change represent? (*give meaning to the rate of change*)

