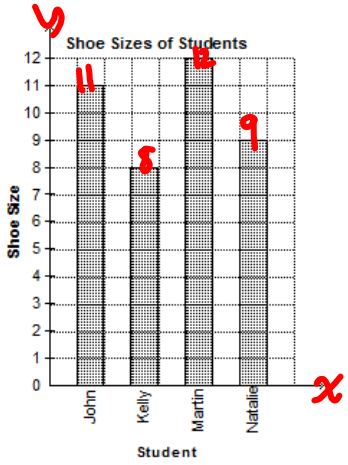
Multiple Choice

Identify the choice that best completes the statement or answers the question.

C 1. Consider the relation represented by this graph. Represent the relation as a table.



a.

Shoe Size	Student
11	John
8	Kelly
12	Natalie
9	Martin

b.

Shoe Size	Student
8	John
11	Kelly
9	Martin
12	Natalie

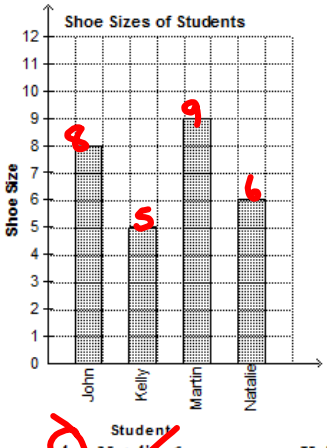
c.

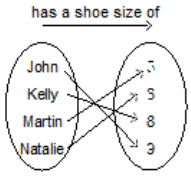
Student	Shoe Size
John	11
Kelly	8
Martin	12
Natalie	9

d.

Student	Shoe Size
John	8
Kelly	11
Martin	9
Natalie	12

B 2. The graph and the arrow diagram represent the same relation. The graph is correct but the arrow diagram is not. Which pairing in the arrow diagram is correct?





a. John, 9 b. Natalie, 6 c. Kelly, 8 d. Martin, 8

C 3. Identify the domain of this relation.

$\{(7,9), (4,6), (8,-10), (5,-7)\}$

4, 5, 7, 8

a. $\{-7, 6, 8, 9\}$
b. $\{-10, -7, 6, 9\}$
c. $\{4, 5, 7, 8\}$
d. $\{4, 5, 8, 9\}$

A 4. For the function $g(x) = 2x - 9$, determine $g(6.7)$.

$g(6.7) = 2(6.7) - 9$
$= 13.4 - 9$
$= 4.4$

a. 4.4 b. −4.4 c. −0.3 d. 7.85

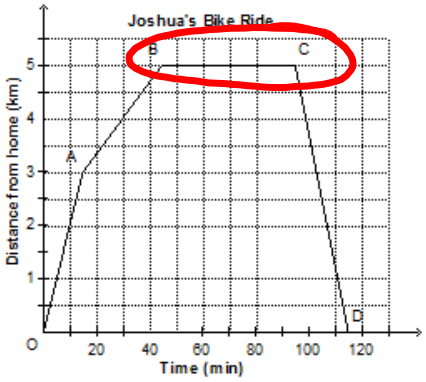
A 5. For the function $g(x) = 2x - 9$, determine x when $g(x) = -19$.

a. −5 b. 14 c. −47 d. −14

$g(x) = 2x - 9$
$-19 = 2x - 9$ (+9)
$-10 = 2x$
$\frac{-10}{2} = \frac{2x}{2}$
$-5 = x$

D

6. Joshua went on a bike ride. For part of the ride, Joshua stopped to play in a park with a friend. Which segment of the graph best describes this part of his bike ride?

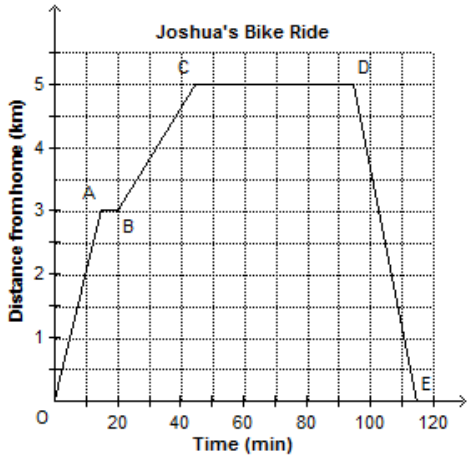


a. CD b. AB

c. OA d. BC

D

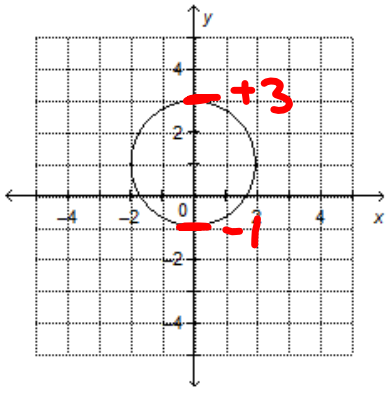
7. Joshua went on a bike ride. Which statement best describes what is happening for line segment DE in this graph?



a. Joshua spends time at the park.
b. Joshua leaves home.
c. Joshua cycles to the park.
d. Joshua returns home.

B

8. Determine the range of the graph.



a. $-2 \le y \le 3$
b. $-1 \le y \le 3$
c. $-2 \le x \le 2$
d. $-1 \le y \le 2$

B 9. The relation between x and y is linear. Which number would complete this table?

x	3	7	11	15	19
y	20	12	4	−4	−12

a. −14 b. −4 c. −13 d. 3

D 10. The altitude of a plane, a metres, is related to the time, t minutes, that has elapsed since it started its ascent. Determine the rate of change of this linear relation.

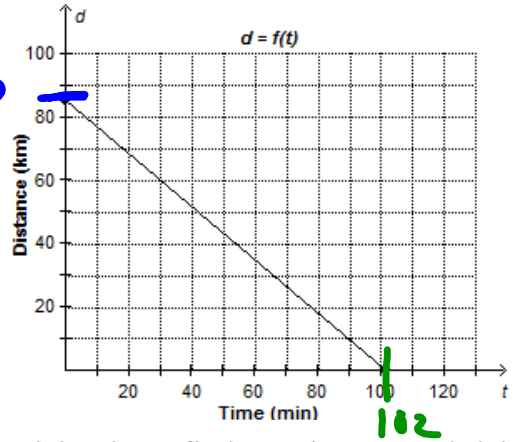
t (min)	0	2	4	6	8
a (m)	4000	5200	6400	7600	8800

a. 1400 m/min b. 1200 m/min c. 1100 m/min d. 600 m/min

D 11. For a service call, an electrician charges a $65 flat fee, plus $35 for every 30 min worked. Determine the rate of change of this linear relation.

a. $35/h
b. $100/h
c. $65/h
d. $70/h

A 12. This graph shows distance, d kilometers, as a function of time, t minutes. Determine the vertical and horizontal intercepts.



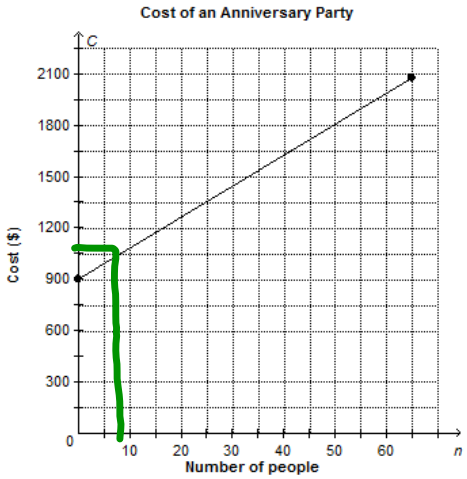
a. Vertical intercept: 85
Horizontal intercept: 102

b. Vertical intercept: 68
Horizontal intercept: 102

c. Vertical intercept: 102
Horizontal intercept: 85

d. Vertical intercept: 85
Horizontal intercept: 68

C 13. The graph shows the cost of hosting an anniversary party. What is the maximum number of people who can attend the party for a cost of $1050?



a. 61 people
b. 13 people
c. 8 people
d. 2 people

Short Answers:

14. For the function f(x) = 4x -7, determine

a) f(3)

$f(x) = 4x - 7$

$f(3) = 4(3) - 7$

$= 12 - 7$

$f(3) = 5$

f(x) = -211

$f(x) = 4x - 7$

$-211 = 4x - 7$ Solve for "x"

$\frac{-204}{4} = \frac{4x}{4}$

$-51 = x$

15. This table shows the refund, r dollars, for different numbers of juice tetra paks, n. Is this relation a function? Explain.

Number of Juice Tetra Paks, n	Refund, r ($)
5	0.25
12	0.60
17	0.85
24	1.20
30	1.50

x y

+7 +5 +7 +6

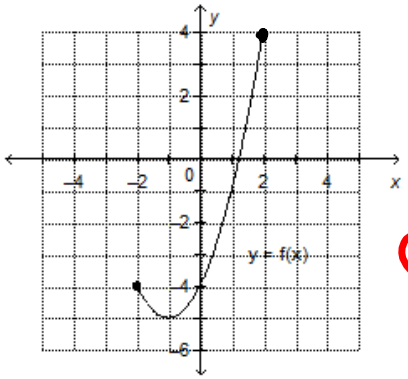
0.35 0.25 0.35 0.30

$\frac{0.35}{7} = 0.05$ $\frac{0.25}{5} = 0.05$ $\frac{0.30}{6} = 0.05$

No "x" # of Juice repeating so Function

Is it linear? rate is 0.05n/$ for all (same) so linear

16. Determine the following:



Domain $\{x \mid -2 \le x \le 2, x \in R\}$

Range $\{y \mid -5 \le y \le +4, y \in R\}$

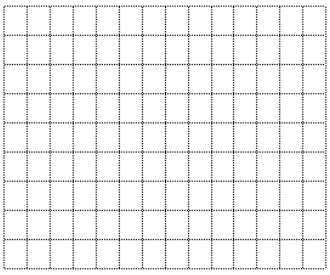
Function or Non-Function

Linear or Nonlinear

17. For this table of values:
a) Graph the data. Will you join the points? Justify your answer.
b) Does the graph represent a function? Explain?

No repeats in 'n' so function

People, n	Cost, C ($)
30	1.00
45	1.50
60	2.00
90	3.00
120	4.00

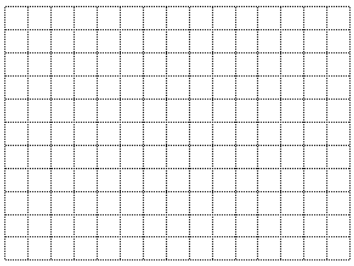


18. Four litres of latex paint covers approximately 36 m² and costs $55.
a) Copy and complete this table.

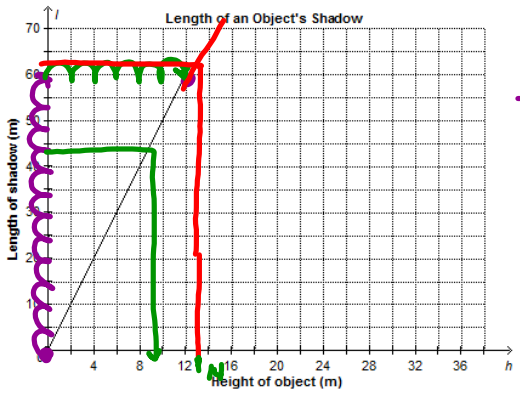
x3 x4 x2

Volume of Paint, p (L)	0	4	8	12	16
Cost, c ($)	0	55	110	165	220
Area Covered, A (m²)	0	36	72	108	144

b) Graph the area covered as a function of the volume of paint.



19. This graph shows the length, l metres, of an object's shadow as a function of the height of the object, h metres.



rise / run = +60 m / +12 m = 5

a) What is the rate of change? What does it represent?

shadow cast vs. height of tree

b) A tree has height 13 m. About how long is its shadow? ≈65 m

c) The length of the shadow of a building is 45 m. About how tall is the building? ≈9 m