

5.6 Graphing Relations

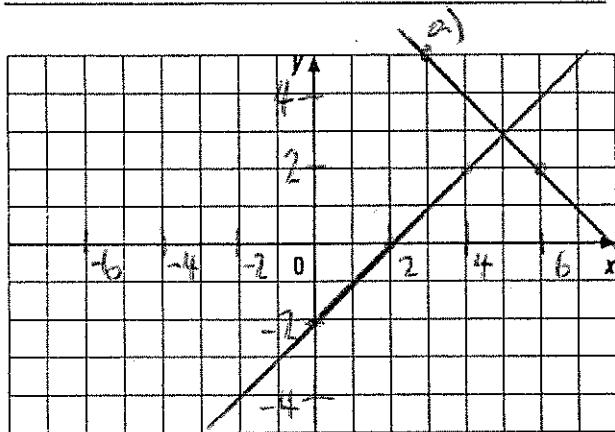
MATHPOWER™ pp. 162-163

1. Express each relation in words and draw its graph on the grid.

a)	x	y	b)	x	y
	-1	9		0	-2
	0	8		2	0
	1	7		4	2
	3	5		8	6
	6	2		-4	-6

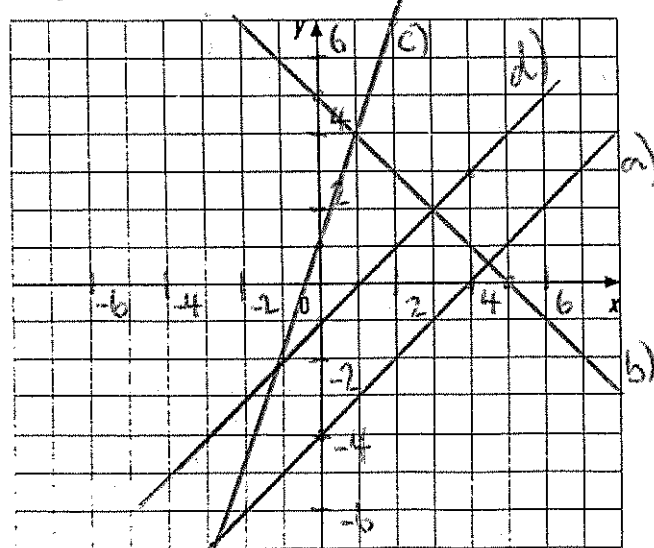
a) y equals x times -1 plus 8

b) y equals x minus 2



2. Find 5 ordered pairs that satisfy each relation. Draw each graph on the grid.

- a) $y = x - 4$ b) $y = -x + 5$
 c) $y = 3x + 1$ d) $y = x - 1$



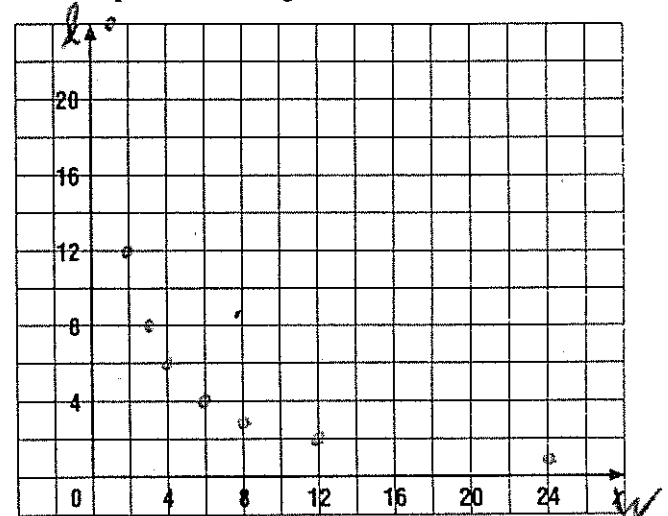
3. The area of a rectangle is 24 cm^2 .

a) Complete the table for possible values of the length and width.

Width, w	Length, l	Ordered Pair, (w, l)
1	24	1, 24
2	12	2, 12
3	8	3, 8
4	6	4, 6
6	4	6, 4
8	3	8, 3
12	2	12, 2
24	1	24, 1

P
50
28
22
20
20
22
28
50

b) Graph the relation. Write the coordinates of each point on the grid.



c) What is the perimeter of each possible rectangle?

See table above.

d) What are the dimensions of the rectangle that has the largest perimeter?

1 by 24

Master 4.21

Extra Practice 2

Lesson 4.2: Linear Relations

1. For each table of values below:
 i) Does it represent a linear relation?
 ii) If the relation is not linear, explain how you know.
 iii) If the relation is linear, describe it.

ii) a) x and y increase by constant amounts
 b) y does not increase by a constant amount.

i) Yes No Yes No

x	y
1	5
2	12
3	19
4	26
5	33

x	y
1	1
3	3
5	7
7	13
9	21

x	y
4	11
2	14
0	17
-2	20
-4	23

x	y
-2	-12
-1	-5
0	0
1	3
2	4

c) x and y increase by constant amounts
 d) y does not change by a constant amount

2. Each table of values represents a linear relation. Complete each table. Explain your reasoning.
- iii) $y = 7x - 2$ $y = \frac{-3}{2}x + 17$

x	y
1	6
2	10
3	14
4	18
5	22

x	y
1	7
3	3
5	-1
7	-5
9	-9

x	y
4	9
2	14
0	19
-2	24
-4	29

3. Create a table of values for each linear relation and then graph the relation. Use values of x from -2 to 2.
- a) $y = x + 4$ b) $y = 2x + 1$ c) $y = 5 - 2x$
4. A computer repair company charges \$80 for a service call, plus \$50 an hour for labour.
- a) Create a table to show the relation between the time in hours for the service call and the total cost.
 b) Is this relation linear? Justify your answer.
 c) Let n represent the time in hours for the service call and C represent the total cost in dollars. Write an equation that relates C and n .
 d) How much will a 7-h service call cost?

Lesson 4.2: Linear Relations key

3. a) $y = x + 4$

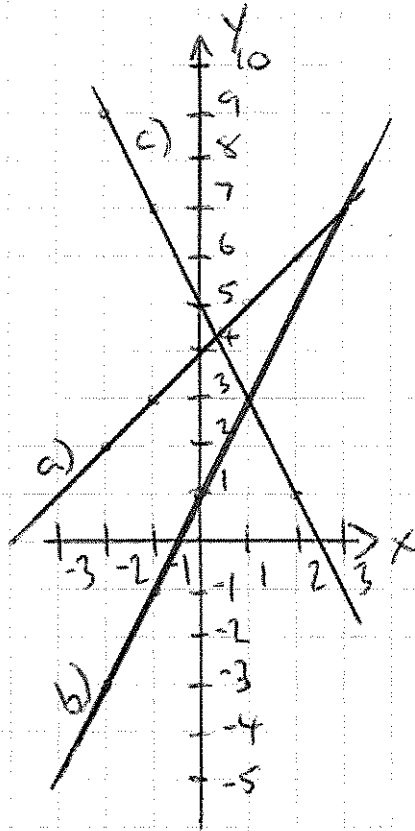
x	y
-2	2
-1	3
0	4
1	5
2	6

b) $y = 2x + 1$

x	y
-2	-3
-1	-1
0	1
1	3
2	5

c) $y = 5 - 2x$

x	y
-2	9
-1	7
0	5
1	3
2	1



4. a)

n, hours	C, cost \$
1	130
2	180
3	230

c) $C = 50n + 80$

d) $C = 50(7) + 80$
 $= 350 + 80$
 $= \$430$

b) Yes, consecutive x and y values increase by the same amount.