

Math 8 Unit 6 Practice Test ~ Linear Equations & Graphing

1. Create a table of values for each relation. Please show your work.

a) $y = -6x + 1$

b) $y = 7x - 4$

$y = -6(-2) + 1$
 $y = 12 + 1$
 $y = 13$

 $y = -6(-1) + 1$
 $y = 6 + 1$

| x | y |
|----|-----|
| -2 | 13 |
| -1 | 7 |
| 0 | 1 |
| 1 | -5 |
| 2 | -11 |

| x | y |
|----|-----|
| -2 | -18 |
| -1 | -11 |
| 0 | -4 |
| 1 | +3 |
| 2 | +10 |

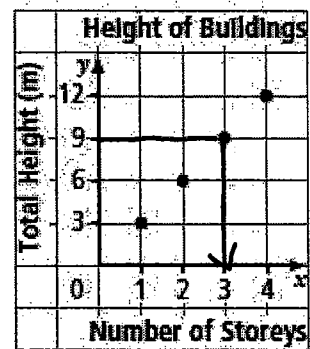
$y = 7(-2) - 4$
 $y = -14 - 4 \Rightarrow -14 - 4$
 $y = -18$

 $y = 7(-1) - 4$
 $y = -7 - 4 = -11$

2. a) Create a table of values for the graph shown on the right.

of Storeys | Total height (m)

| | |
|---|----|
| 1 | 3 |
| 2 | 6 |
| 3 | 9 |
| 4 | 12 |



b) How many storeys are there if the total height is 9m? 3 storeys

c) Describe the pattern.

As the number of storeys increased by 1, the total height increased by 3m.

d) Is it possible to have points between the ones on the graph? Explain your answer.

No, can't have half a storey (in between floors). These points are called discrete data.

3. State whether the following are linear relations. Explain **two ways** you know.

Table 1 • each column goes up in a consistent pattern.

| x | y |
|---|----|
| 1 | 3 |
| 2 | 6 |
| 3 | 9 |
| 4 | 12 |
| 5 | 15 |

Linear? Yes

Table 2 • The y column doesn't have a constant # that it increases by

| x | y |
|----|----|
| 2 | 3 |
| 4 | 9 |
| 6 | 16 |
| 8 | 24 |
| 10 | 38 |

Linear? No

2 ways:
 ① pattern
 ② Graph is straight line.

4. Given the table of values below, write a linear equation representing the pattern.

| Term Number (t) | Term Value (v) |
|-----------------|----------------|
| 1 | 8 |
| 2 | 13 |
| 3 | 18 |
| 4 | 23 |

Pattern: As "t" increases by 1, "v" increases by +5

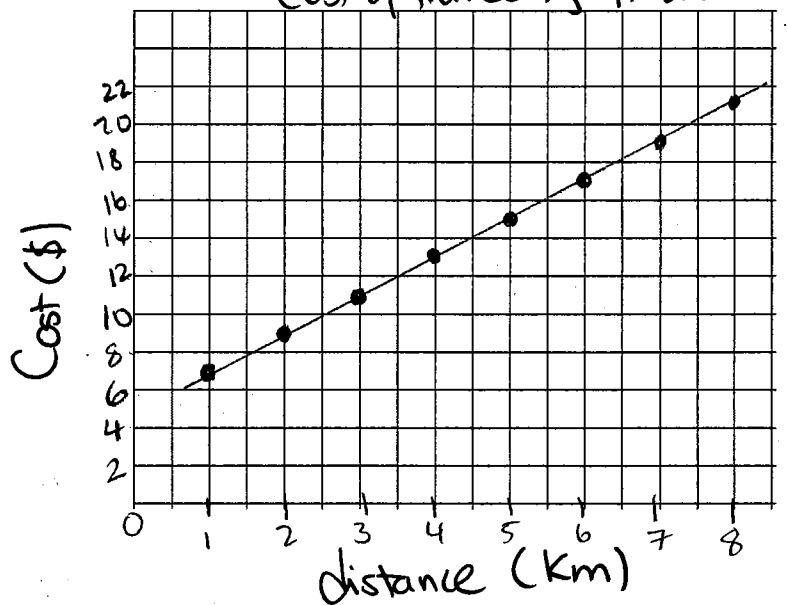
Equation: $v = 5t + 3$

5. A taxi company in Kelowna charges customers \$5.00, plus \$2.00 for each kilometer being driven. This can be represented as $C = 5 + 2d$.

a) Create a table of values for the relation (up to 8 km), and then graph the relation. Please give your graph a title and label the axes with numbers and units.

| d | C |
|---|----|
| 1 | 7 |
| 2 | 9 |
| 3 | 11 |
| 4 | 13 |
| 5 | 15 |
| 6 | 17 |
| 7 | 19 |
| 8 | 21 |

Cost of traveling in a taxi



$C = 5 + 2(1)$
 $C = 5 + 2 = 7$

 $C = 5 + 2(2)$
 $C = 5 + 4 = 9$

b) Describe the relationship between the variables in the graph.

As the distance increases by 1 km, the cost increases by \$2.

c) What is the cost at 20 km?

$C = 5 + 2d$
 $C = 5 + 2(20)$
 $C = 5 + 40 = \boxed{\$45}$

The cost of a taxi ride is \$45 at 20 km.

d) How far can a person be driven by the taxi if they have \$23?

$23 = 5 + 2d$
 $-5 \quad -5$
 $18 = 2d/2$
 $d = \boxed{9}$

The person can travel 9 km w/ \$23.