

## Section 6.2 Extra Practice

1. Convert each relation from its current representation to a set of ordered pairs and to a graph.

a)

x	y
4	-2
1	-1
0	0
1	1
4	2

(4, -2)  
(1, -1)  
(0, 0)  
(1, 1)  
(4, 2)

(0, -3)

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

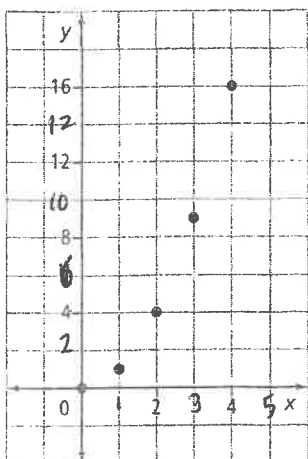
b)  $y = 2x - 3$

2. Convert each relation from its current representation to a table of values and to words.

a) ... (-1, -2), (0, 0), (1, 2), (2, 4), ...

x	y
-1	-2
0	0
1	2
2	4

b)



x	y
0	0
1	1
2	4
3	9
4	16

As x increases by 1, y is the square of x.

3. Determine whether each relation is linear or non-linear. Explain your decision.

a)  $y = \frac{9}{5}x + 32$  This graph is linear and has a positive slope of almost 2 (1.8). The graph crosses y axis at (0, 32)

b)

x	y
1	1
2	1
3	2
4	3
5	5

$\Delta x = 1$

$\Delta y = 0$  for consecutive  $\Delta x = 1$  values of  $\Delta y = 2$  y the change is

not linear. Not constant so

c) (-5, 0), (-2, 1), (1, 2), (4, 3), (7, 4)

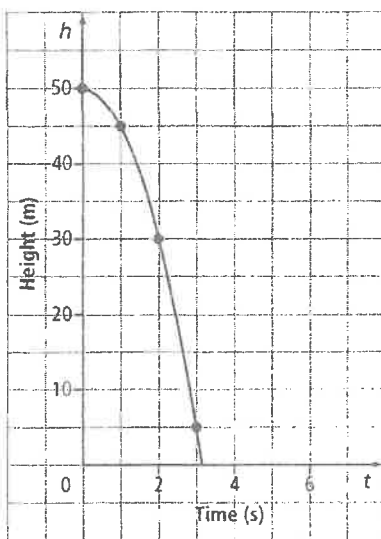
for each increase of 3 for x, y increases by 1

$\Delta x = +3$

x	y
-5	0
-2	1
1	2
4	3
7	4

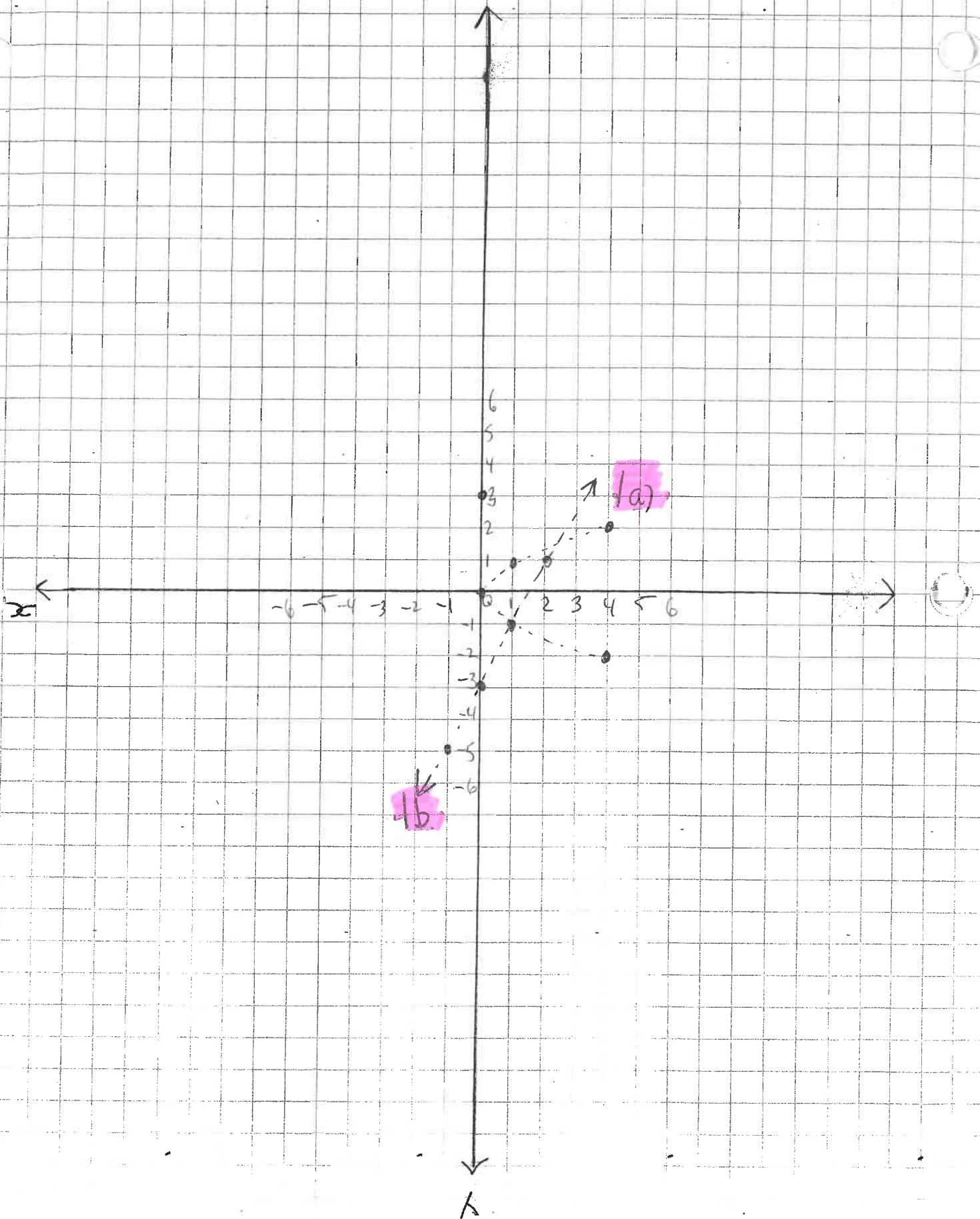
x	y
0	50
1	45
2	30
3	5

d)



As time increases by 1 second height changes by 5m, then 15m, then 25m

# 6.2 Extra Practice



4. For each relation, state the dependent variable and the independent variable.

a)  $V = \frac{4}{3}\pi r^3$

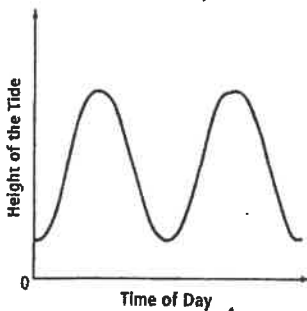
Dep.  $V$   
Indep  $r$

b)

Age of a Person (years)	Height (cm)
2	87
3	96
4	104
5	110

depend  $\rightarrow$  height  
Indep.  $\rightarrow$  age

c)



depend  $\rightarrow$  height  
indep. time.

5. The table of values shows the cost of movie tickets at a local theatre.

Number of Tickets	Cost (\$)
1	12
2	24
3	36
4	48

$\Delta t$   
 $\downarrow 2-1$   
 $= 1$

$\Delta C = 12$   
 $12 \cdot 36 - 24 = 12$

a) Is this a linear or non-linear relationship? Explain how you know.

Linear b/c  $\Delta x \neq \Delta y$   
Values are constant between consecutive values.

b) Assign a variable to represent each quantity in the relation. Which variable is the dependent variable and which is the independent variable?

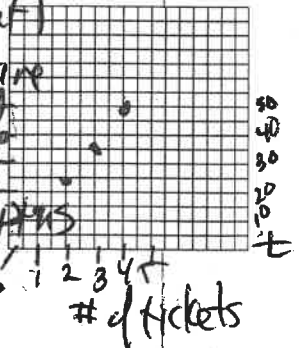
$n = \#$  of tickets (indep) cost is tickets  
 $C = \text{Cost (dependent)}$

c) Are the data discrete or continuous? Explain how you know.

discrete / counted tickets are

d) Graph the data.

no parts to a ticket - no points between  
A white-tailed deer can sprint up to 48 km/h. One deer is walking at 8 km/h. Consider the relationship between the total distance, in kilometres, travelled by this deer and time, in hours.



a) Assign a variable to represent each quantity in the relation. Identify the dependent variable and the independent variable.

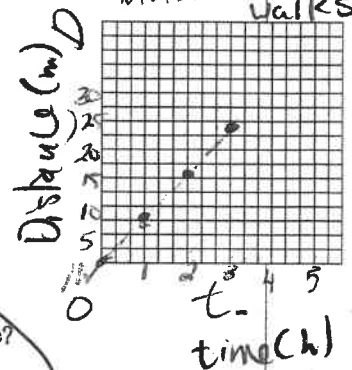
(t) time - independent  
(D) distance (depend.)

b) Assume the deer walks for 3 h without stopping. Create a table of values for this relation.

t (h)	D (km)
0	0
1	8
2	16
3	24

Distance Deer walks.

c) Graph the relation.



d) Is the relation linear or non-linear? Explain.

Linear as plus lie in a straight line

e) Is the relation continuous or discrete? Explain.

Continuous  
explain: Both measures time is continuous can have min. in an hour

explain: slope is speed of deer is 8

constant