

B1 Patterns & Equations from T.O.V's

Note Title

24/03/2014

Solve the following:

1. a) Identify the pattern (see table)

b) Is it linear? Explain. Yes, same pattern in columns

★ c) Write an equation for y in terms of x (means using x how can we find y ?)

d) If $x = 50$, what is y ?

e) Graph it.

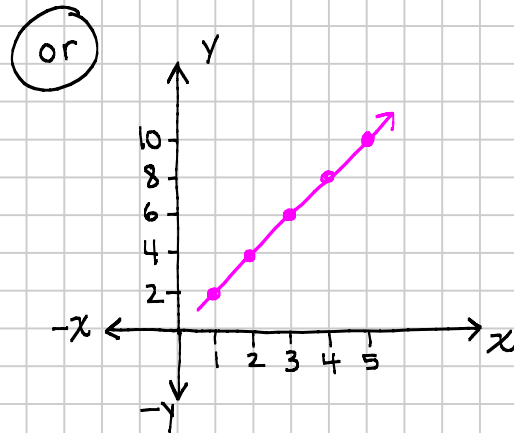
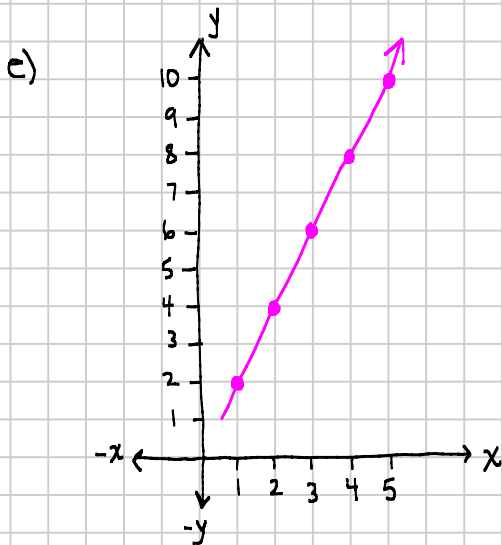
x	y
1	2
2	4
3	6
4	8
5	10

+1 (vertical bracket on x column)
+2 (vertical bracket on y column, circled)
Multiply (arrow from circled +2 to y column)

c) Pattern on y side gets multiplied to x .

$$y = 2(x)$$

d) $x = 50 \rightarrow y = 2(50) = 100$



consecutive: one after another ex: 1, 2 99, 100 -3, -4

2. a) Identify pattern: (+.o.v)

b) Equation for y in terms of x :

c) If $x = 15$ what is y ?

d) If $x = -10$, what is y ?

x	y
0	1
1	3
2	5
3	7
4	9

+1 (vertical bracket on x column)
+2 (vertical bracket on y column, circled)
use this! (arrow from circled +2 to y column)

b) $y = 2(x) + 1$

$$\begin{array}{l} 2(0) = 0 + 1 = 1 \\ 2(1) = 2 + 1 = 3 \\ 2(2) = 4 + 1 = 5 \end{array}$$

c) $x = 15 \rightarrow y = 2x + 1$
 $2(15) + 1$
 $30 + 1$

$y = 31$

d) $x = -10 \rightarrow y = 2x + 1$
 $2(-10) + 1$
 $-20 + 1$

$y = -19$

3. a) Identify pattern: T.O.V

b) Equation for y in terms of x:

c) $x = 22, y = ?$

x	y
0	2
1	5
2	8
3	11

+1

b) $y = 3(x) + 2$

$$\begin{array}{l} 3(0) = 0 + 2 = 2 \\ 3(1) = 3 + 2 = 5 \end{array}$$

c) $x = 22$ $y = 3x + 2$
 $3(22) + 2$
 $66 + 2$

$y = 68$

4. a) Identify pattern: +0V

b) Equation for y:

c) $x = -100, y = ?$

x	y
-4	11
-3	9
-2	7
-1	5

+1

b) $y = -2x + 3$

$$\begin{array}{l} -2(-4) = 8 + 3 = 11 \\ -2(-3) = 6 + 3 = 9 \end{array}$$

c) $y = -2(-100) + 3$
 $200 + 3$

$y = 203$

5. Are the following linear? Explain.

a)

x	y
1	10
4	19
7	

+3

yes
constant patterns
in columns.

b)

x	r	s
0	-1	-2
1	2	4
2	4	8

+2 +4

No, jump in pattern.