

# Master Maths 9 Worksheet 30

## Linear Relationships 1

# 30

Name: .....

1. (a) If  $y = 2x$  find  $y$  when  $x = 3$ .

(b) If  $m = n + 3$  find  $m$  when  $n = 6$ .

(c) If  $A = 2B + 1$  find  $A$  when  $B = 0$ .

2. Complete these tables for the rules given.

(a) Rule:  $Q = 3P$

$P$	-3	-2	-1	0	1	2	3
$Q$							

(b) Rule:  $y = 3x - 4$

$x$	-3	-2	-1	0	1	2	3
$y$							

(c) Rule:  $m = 2 - n$

$n$	-3	-2	-1	0	1	2	3
$m$							

3. For the tables of values given, find the rule connecting the variables.

(a)

$c$	-3	-2	-1	0	1	2	3
$d$	-6	-4	-2	0	2	4	6

$d =$

(b)

$x$	-3	-2	-1	0	1	2	3
$y$	-10	-7	-4	-1	2	5	8

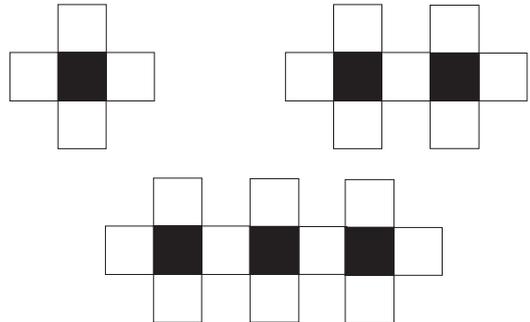
$y =$

(c)

$v$	-3	-2	-1	0	1	2	3
$w$	-3	-1	1	3	5	7	9

$w =$

4. The repeating pattern below is made using black and white tiles.



If  $b$  represents the number of black tiles and  $w$  represents the number of white tiles, complete the table below.

$b$	1	2	3	4	5
$w$					

(a) Write a formula connecting  $b$  and  $w$

$w =$

(b) Find the number of white tiles if the pattern contains 20 black tiles.

(c) If 22 white tiles have been used in the pattern, how many black tiles are needed?

5. A car is travelling at a speed of 10 metres per second.

(a) Complete this table showing the distance  $d$  travelled in metres after  $t$  seconds.

$t$	0	1	2	3	4	5
$d$						

(b) Find a rule connecting  $d$  and  $t$ .

$d =$

(c) How far would the car move in 2 minutes?

(d) How long would the car take to travel 1 kilometre?