Name _____ Block _____

Worksheet 4.2 & 4.3

1. This table of values shows altitude A, expressed in meters, and temperature, T, expressed in degrees Celsius.

Altitude, A (m)	Temperature, T $(°C)$
610	15.0
1220	11.1
1830	7.1
2440	3.1
3050	−0.8
3660	−4.8

a) Identify the independent and dependent variables.

A altitude independent
T Temp dependent

b) Why is this relation also a function?

Each value of A (domain) has only one value of T (range)

c) Find the domain and range.

domain {610, 1220, 1830, 2440, 3050, 3660}

Range {-4.8, -0.8, 3.1, 7.1, 11.1, 15}

2. Indicates which of the following relations are also functions.

a) {(1, 1), (2, 8), (3, 27), (4, 64)}

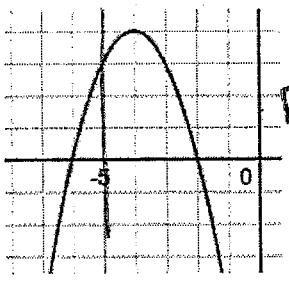
function

b) {(3, 4), (3, 5), (3, 6), (3, 7)}

Not a function

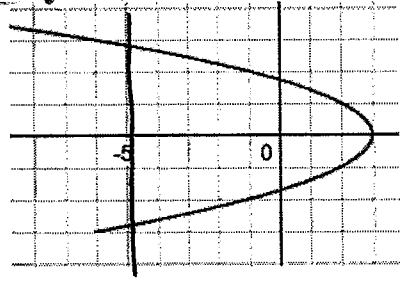
3. Indicates which of the following relations are also functions. (Use the vertical line test.)

a)



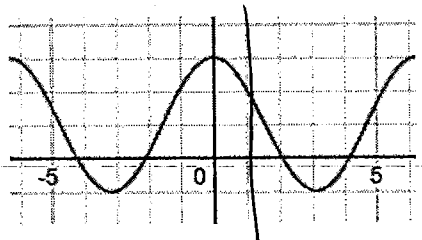
Function

b)



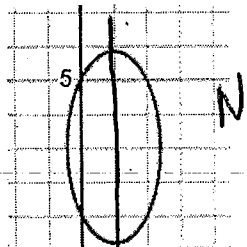
Not a function

c)



Function

d)



Not a Function

4. Evaluate the following expressions using the functions below. Show your work.

$f(x) = 3x - 2$ $h(x) = 3x^2 + 1$ $p(n) = n^2 - 5n + 7$

a) $f(0)$

$f(0) = 3(0) - 2$

$f(0) = -2$

b) $h(2)$

$h(2) = 3(2)^2 + 1$

$h(2) = 3(4) + 1$

$h(2) = 12 + 1$

$h(2) = 13$

c) $p(0)$

$p(0) = 0^2 - 5(0) + 7$

$p(0) = 0 - 0 + 7$

$p(0) = 7$

d) $f(-5)$

$f(-5) = 3(-5) - 2$

$f(-5) = -15 - 2$

$f(-5) = -17$

e) $h(-5)$

$h(-5) = 3(-5)^2 + 1$

$h(-5) = 3(25) + 1$

$h(-5) = 75 + 1$

$h(-5) = 76$

f) $p(-2)$

$p(-2) = (-2)^2 - 5(-2) + 7$

$p(-2) = 4 + 10 + 7$

$p(-2) = 21$

g) $f\left(\frac{2}{3}\right)$

$f\left(\frac{2}{3}\right) = 3\left(\frac{2}{3}\right) - 2$

$f\left(\frac{2}{3}\right) = 2 - 2$

$f\left(\frac{2}{3}\right) = 0$

h) $h(\sqrt{10})$

$h(\sqrt{10}) = 3(\sqrt{10})^2 + 1$

$h(\sqrt{10}) = 3(10) + 1$

$h(\sqrt{10}) = 30 + 1$

$h(\sqrt{10}) = 31$

i) $p(m-2)$

$p(m-2) = (m-2)^2 - 5(m-2) + 7$

$P(m-2) = (m-2)(m-2) - 5m + 10 + 7$

$P(m-2) = m^2 - 2m - 2m + 4 + 5m + 17$

$P(m-2) = m^2 - 9m + 21$

5. Given the function $f(n) = 5n - 3$. Determine the value of n when:

a) $f(n) = 27$

$27 = 5n - 3$

$30 = 5n$

$6 = n$

b) $f(n) = -13$

$-13 = 5n - 3$

$-10 = 5n$

$-2 = n$

6. Given the function $g(x) = 13 - 7x$. Determine the value of x when:

a) $g(x) = -22$

$-22 = 13 - 7x$

$-35 = -7x$

$5 = x$

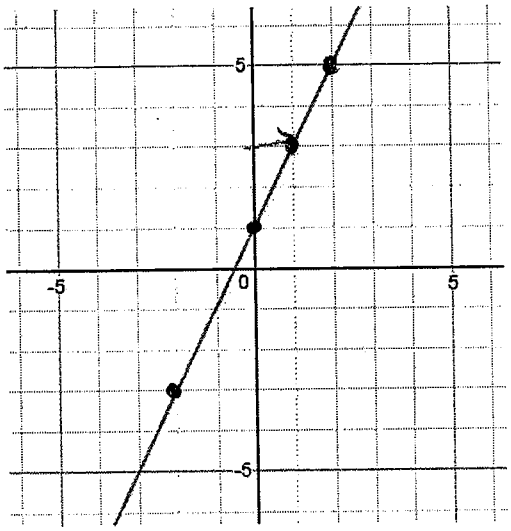
b) $g(x) = 48$

$48 = 13 - 7x$

$35 = -7x$

$-5 = x$

7. Given the graph of the function $f(x)$, determine :



a) $f(1) =$ 3

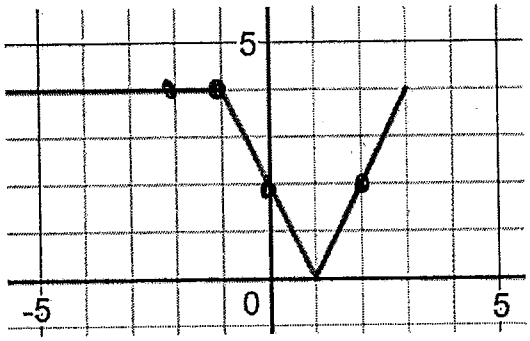
b) $f(-2) =$ -3

c) $f(2) =$ 5

d) $x =$ 0 when $f(x) = 1$ $y=1$

e) $x =$ 1 when $f(x) = 3$ $y=3$

8. Given the graph of the function $h(x)$, determine :



a) $h(2) =$ 2

b) $h(0) =$ 2

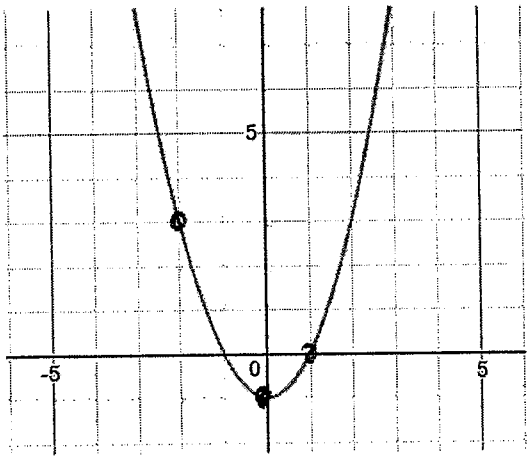
c) $h(-1) =$ 4

d) $h(-2) =$ 4

e) $x =$ 1 when $h(x) = 0$ $y=0$

f) $x =$ 0 when $h(x) = 2$ $y=2$

9. Given the graph of the function $j(x)$, determine:



a) $j(0) =$ -1

b) $j(1) =$ 0

c) $j(-2) =$ 3

d) $x =$ -2 or 2 when $j(x) = 3$ $y=3$

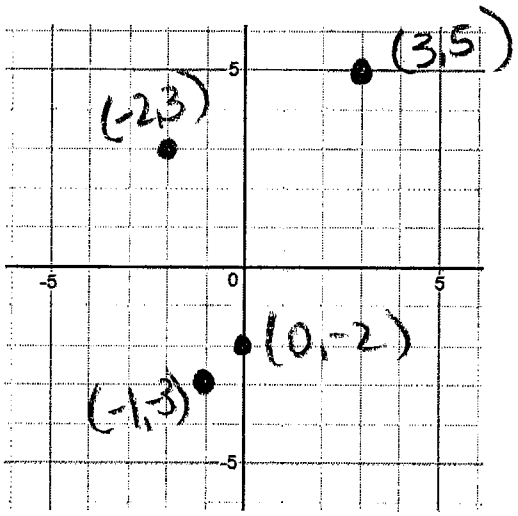
10. Expresses the following statements as ordered pairs, and then plot the points.

a) $f(3) = 5$ (3,5)

b) $f(-2) = 3$ (-2,3)

c) $f(-1) = -3$ (-1,-3)

d) $f(0) = -2$ (0,-2)



11. The function $C = 3.50 + 2.25d$ describes the cost, C dollars, for a taxi ride for distance, d kilometre, travelled.

a) Write the function in function notation.

$C(d) = 3.5 + 2.25d$

b) Determine the value of $C(50)$. Clearly explain what these numbers represent.

$C(50) = 3.5 + 2.25(50)$

$C(50) = 3.5 + 112.5$

$C(50) = 116$

50 Km will cost $116

c) The airport is 18.5 km from KSS. How much would it cost to take a taxi from the airport to KSS ?

$d = 18.5$

$C(18.5) = 3.5 + 2.25(18.5)$

$C(18.5) = 3.5 + 41.625$

$C(18.5) = 45.125$

$C(18.5) = \$45.13$

d) How far can you travel by taxi if you have \$100 ?

$100 = 3.5 + 2.25d$

$96.5 = 2.25d$

$\frac{96.5}{2.25} = d$

$d = 42.888$

$d = 42.9$ Km