

# National 4 Mathematics: Homework 10

## § 1 Change the Subject of the Formula

**1** Change the subject of each formula to  $x$ .

a)  $y = x + 3$

d)  $y = x - b$

g)  $y = kx$

j)  $y = x - 5t$

m)  $y = 7x + 4a$

b)  $y = x - 5$

e)  $y = 3x$

h)  $y = ax$

k)  $y = 2x + 1$

n)  $y = 3b + 4x$

c)  $y = x + a$

f)  $y = 10x$

i)  $y = 3p + x$

l)  $y = 3x - 7$

o)  $y = 8 + 10x$

**2** Make  $x$  the subject of each formula below.

a)  $y = ax + b$

d)  $p = qx + 2r$

b)  $y = mx + c$

e)  $m = fx - 3n$

c)  $t = sx - r$

f)  $a = b + cx$

**3** Make  $x$  the subject of each formula.

a)  $y = \frac{3}{x}$

b)  $d = \frac{c}{x}$

c)  $m = \frac{y}{x}$

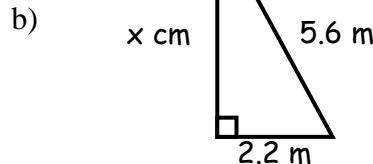
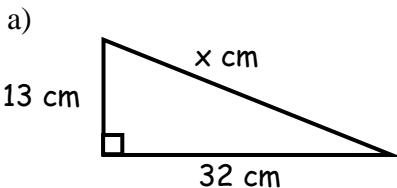
**4** Change the subject of each formula to the letter shown in brackets.

a)  $v = u + at$  (t)

b)  $P = 2l + 2b$  (l)

## § 2 Pythagoras

**1** Calculate  $x$  in each triangle



**2** Calculate the distance between each pair of points below.

(a) A(2, 5), B(7, 10)

(b) P(1, 8), Q(12, 2)

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## § 3 Mixed

**1** Copy and complete the table of values

x	0	1	2	3	4	5
y	1	2				

a) Plot the points and draw the graph of  $y = x + 1$

b) Repeat for the line  $y = 2x + 2$

**2** Solve the following equations

a)  $3(2x - 4) = 12$

b)  $7(3v + 1) = 28$

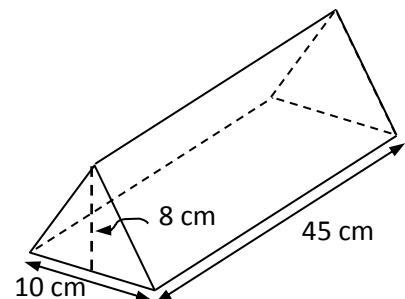
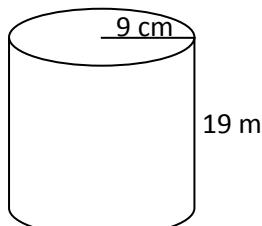
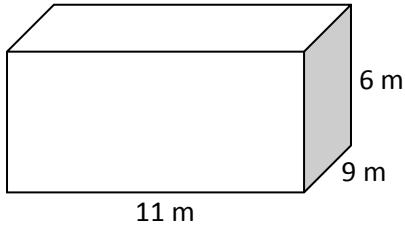
c)  $4(2x - 9) = 4$

d)  $17(s + 1) = 51$

e)  $2(4 + 3z) = 11$

f)  $10(2h - 3) = 70$

**3** Find the volumes of the solid shapes below.



**4** The table below shows the weights in kilograms of a group of boys.

Show this information on a stem and leaf chart.

39	42	48	38	51	44
42	51	53	42	47	39
38	45	43	51	47	57
42	44	38	43	48	50
42	41	52	49	39	46