$2(x + a) = y$

$a(x + y) = y(a + z)$

REARRANGEMENT

OF
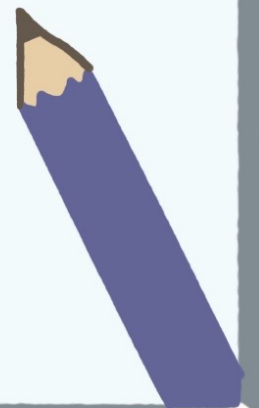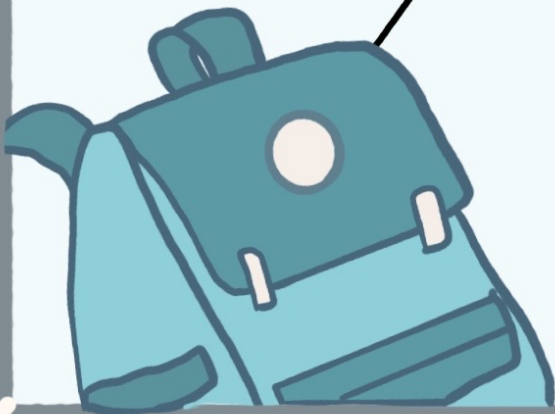
$\frac{1}{3}x + 2y = 3z$

$a(x + y) = ay$

A FORMULA

$\frac{a(x + y)}{b} = c$

$\frac{x}{a} = \frac{y}{z}$

CHALK

1 $f = 5c - 8$

Make c the subject of the formula.

$$c = \frac{f + 8}{5}$$

....

(Total for question 1 is 2 marks)

2 $u = 4t - 21$

Make t the subject of the formula.

$$t = \frac{u + 21}{4}$$

....

(Total for question 2 is 2 marks)

3 $x = 3y - 2$

Make y the subject of the formula.

$$y = \frac{x + 2}{3}$$

....

(Total for question 3 is 2 marks)

The Maths Society

4 $m = 5n + 2p$

Make p the subject of the formula.

$$p = \frac{m - 5n}{2}$$

....

(Total for question 4 is 2 marks)

5 $a = 3c - 2$

Make c the subject of the formula.

$$c = \frac{a + 2}{3}$$

....

(Total for question 5 is 2 marks)

6 $P = 3a + 3b$

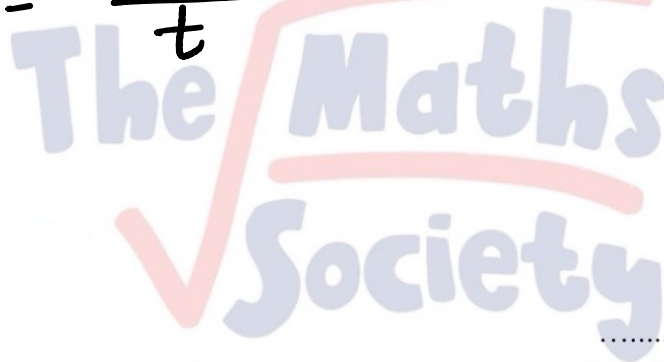Make a the subject of the formula.

$$a = \frac{P - 3b}{3}$$

....

(Total for question 6 is 2 marks)

The Maths Society

7   Make n the subject of $m = n^2 + 3$

$$n = \pm \sqrt{m - 3}$$

8   Make a the subject of $v = u + at$

$$a = \frac{v - u}{t}$$

9   Make a the subject of $v^2 = u^2 + 2as$

$$a = \frac{v^2 - u^2}{2s}$$

The Maths Society

10 Make b the subject of $a = \sqrt{\dfrac{b+2}{5}}$

$$b = 5a^2 - 2$$

11 Make b the subject of $A = 3b + 9$

$$b = \frac{A - 9}{3}$$
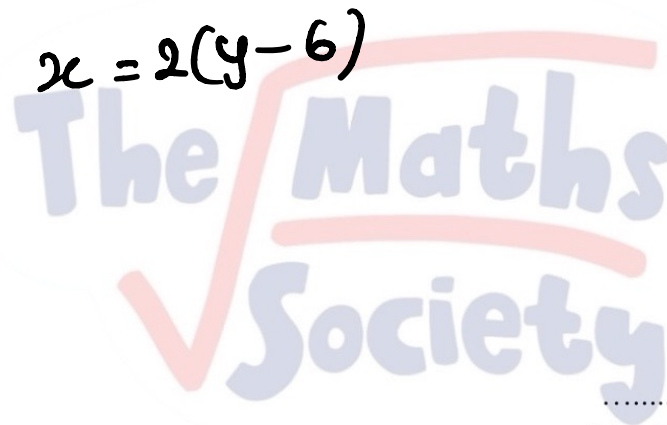
The Maths Society

12   Make x the subject of $y = 3x - 2$

$$x = \frac{y+2}{3}$$

13   Make x the subject of $y = \frac{1}{2}x + 6$

$$x = 2(y - 6)$$

14   Make x the subject of $y = \frac{2}{5}x - 12$

$$x = \frac{5}{2}(y + 12)$$

The Maths Society

15 Make x the subject of $\qquad 5x + 6y + 12 = 0$
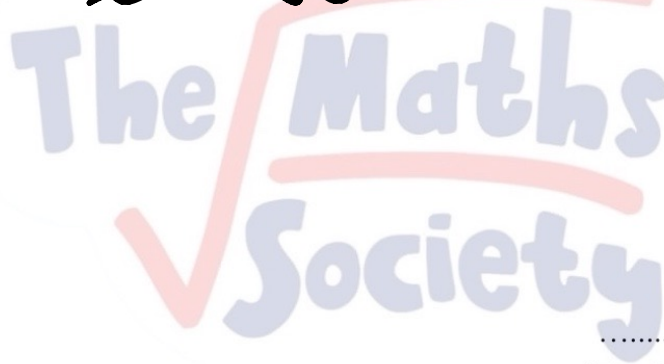
$$x = \frac{-6y - 12}{5}$$

(Total for question 15 is 2 marks)

16 Make x the subject of $\qquad y = x^3 - 5$

$$x = \sqrt[3]{y + 5}$$

(Total for question 16 is 2 marks)

17 Make x the subject of $\qquad y = \frac{2x + 3}{4}$

$$x = \frac{4y - 3}{2}$$

(Total for question 17 is 3 marks)

The Maths Society

18   Make *a* the subject of $x = 3(a + 9)$

$$a = \frac{x}{3} - 9$$

....

19 $a = \dfrac{3 + c}{b}$

Make *b* the subject of the formula.

$$b = \frac{3 + c}{a}$$

....

20 $d = \sqrt{\dfrac{3h}{2}}$

Make *h* the subject of the formula.

$$h = \frac{2d^2}{3}$$

....

The Maths Society

1. Make *p* the subject of the formula $m = 3n + 2p$

$$p = \frac{m - 3n}{2}$$

p = ...

(Total 2 marks)

2. Make *c* the subject of the formula $a = 3c - 4$

$$c = \frac{a + 4}{3}$$
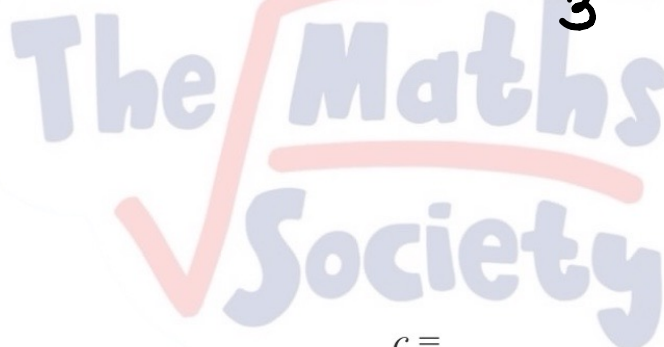
c = ………………………………

(Total 2 marks)

3. Make *b* the subject of the formula $P = 2a + 2b$

$$b = \frac{P - 2a}{2}$$

b = ...

(Total 2 marks)

The Maths Society

4. Make c the subject of the formula $\quad f = 3c - 4$

$$c = \frac{f+4}{3}$$

$c =$ ....

5. Make t the subject of the formula

$$u = 7t + 30$$

$$t = \frac{u-30}{7}$$

$t =$ ....

The Maths Society

6. Make *t* the subject of the formula $v = u + 5t$

$$t = \frac{v - u}{5}$$

$$t = \text{………………..}$$

(Total 2 marks)

7. Make *y* the subject of the formula

$$x = 3y + 2$$

$$y = \frac{x - 2}{3}$$

………………………….

(Total 2 marks)

The Maths Society

8. Rearrange $y = \frac{1}{2}x + 1$ to make x the subject.

$$x = 2(y-1)$$

....

(Total 2 marks)

9. Make a the subject of the formula $s = \frac{a}{4} + 8u$

$$a = 4(s - 8u)$$

$a = $ ....

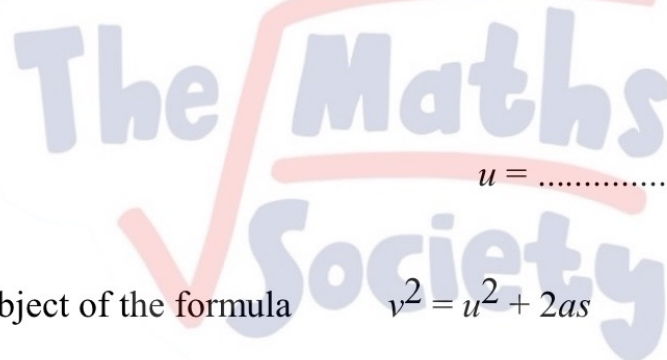**(Total 2 marks)**

The Maths Society

10. Make u the subject of the formula

$$D = ut + kt^2$$

$$u = \frac{D - kt^2}{t}$$

$$u = \text{.................................}$$

(Total 2 marks)

11. Make s the subject of the formula $\quad v^2 = u^2 + 2as$

$$s = \frac{v^2 - u^2}{2a}$$

$$s = \text{.................................}$$

(Total 2 marks)

The Maths Society

12. Make t the subject of the formula

$2(t - 5) = y$

$$t = \frac{y}{2} + 5$$

$t = $ ....

13. Make n the subject of the formula $\quad m = 5n - 21$

$$n = \frac{m + 21}{5}$$

$n = $ ....

The Maths Society

14. Make q the subject of the formula $\qquad P = 2q + 10$

$$q = \frac{P - 10}{2}$$

$q = $ ....

(Total 2 marks)

15. When you are h feet above sea level, you can see d miles to the horizon, where

$$d = \sqrt{\frac{3h}{2}}$$

Make h the subject of the formula $\qquad d = \sqrt{\frac{3h}{2}}$

$$h = \frac{2d^2}{3}$$

$h = $ ....

(Total 2 marks)

The Maths Society

1. Make d the subject of

$$e = d + 5$$

$$d = e - 5$$

d = ...
(1)

2. Rearrange $t = \dfrac{w}{2}$ to make w the subject.

$$w = 2t$$
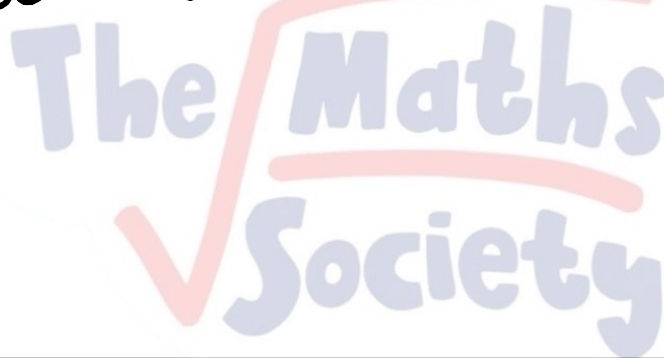
w = ...
(1)

3. Rearrange this formula to make c the subject

$$a = c - w$$

Circle your answer.

$c = a - w$ $c = w - a$ $c = aw$ $\boxed{c = a + w}$

(1)

The Maths Society

4. Make x the subject of

$$y = 3x$$

Circle your answer.

$$x = y + 3 \qquad \boxed{x = \frac{y}{3}} \qquad x = \frac{3}{y} \qquad x = y - 3$$

(1)

---

5. Make *w* the subject of the formula

$$y = 3w - a$$

$$\omega = \frac{y + a}{3}$$

w = ...

(2)

---

6. Make *w* the subject of the formula

$$s = \frac{w}{a}$$

$$\omega = as$$

w = ...

(1)

7. $v = u + 10t$

(a) Work out the value of v when u = 4 and t = 3

$$V = 4 + 10(3)$$
$$= 84$$

v = ...
(2)

(b) Make u the subject of the formula

$v = u + 10t$

$$u = v - 10t$$
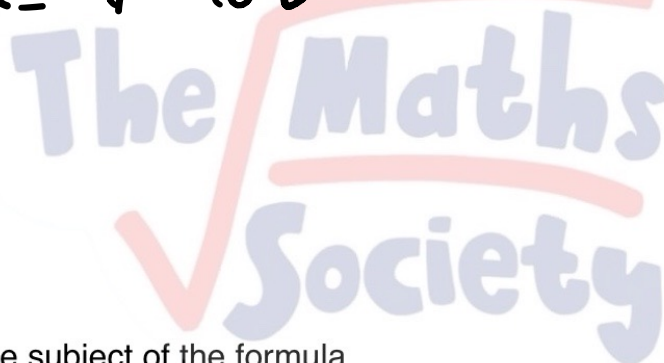
u = ...
(2)

(c) Make t the subject of the formula

$v = u + 10t$

$$t = \frac{v - u}{10}$$

t = ...
(2)

The Maths Society

8. Given that $x + y = 1$

What does y equal?

$$y = 1 - x$$

y = ...

(1)

9. Rearrange $y = \dfrac{k}{x}$ to make x the subject

$$x = \dfrac{k}{y}$$

x = ...

(2)

10. Isaac is rearranging $m = 3t - 8$ to make t the subject.

$$m = 3t - 8$$

$$-8 \qquad\qquad -8$$

$$m - 8 = 3t$$

$$\div 3 \qquad \div 3$$

$$\frac{m - 8}{3} = t$$

Explain what mistake Isaac has made.

.... she do −8 but actually +8 ......

....

(1)

The Maths Society

11. Here is a rectangle.

2x + 1

x
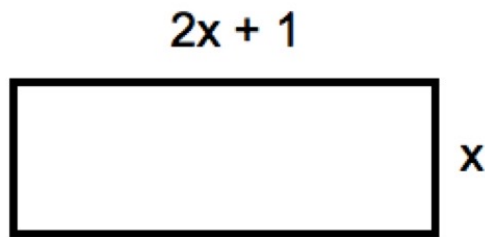
P is the perimeter of the rectangle.

(a) Show that $P = 6x + 2$

$$P = 2x + 2(2x + 1)$$
$$= 6x + 2$$

(2)

(b) Express x in terms of P

$$x = \frac{P - 2}{6}$$

x = ...

(2)

The Maths Society

12. Make *m* the subject of the formula

$$s = \frac{hm}{4}$$

$$m = \frac{4s}{h}$$

m = ...

(2)

---

13. Express *v* in terms of *t*

$$t = \frac{v}{4} + 1$$

$$v = 4(t-1)$$

v = ...

(2)

The Maths Society

14. Make *d* the subject of the formula $c = 4d + 5$

$$d = \frac{c - 5}{4}$$

d = ...

(2)

15. Make *g* the subject of the formula:

$a = \sqrt{g}$

$$g = a^2$$

g = ...

(2)

The Maths Society
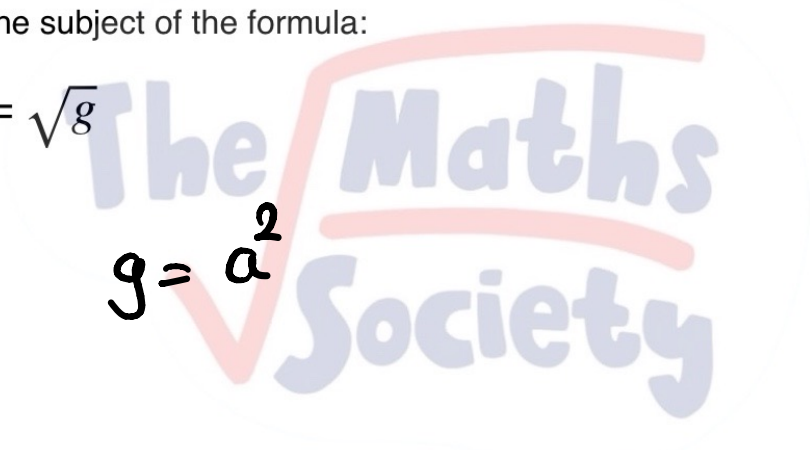
16. Make y the subject of the formula:

$$k = y^3 + a$$

$$y = \sqrt[3]{k-a}$$

y = ...
(2)

---

17. $C = 4x + 5y$

(a) Find the value of C when $x = 9$ and $y = -2$

$$C = 4(9) + 5(-2)$$
$$= 26$$

C = ...
(2)

(b) Make x the subject of the formula

$$x = \frac{C - 5y}{4}$$

x = ...
(2)

(c) Find the value of x when $C = 51$ and $y = 3$

$$x = \frac{51 - 5(3)}{4} = 9$$

x = ...
(2)

The Maths Society

18. Given that $3y = 2x$

(a) Write y in terms of x

$$y = \frac{2x}{3}$$

y = ...
(2)

(b) Write x in terms of y

$$x = \frac{3y}{2}$$

x = ...
(2)

---

19. Rearrange $2x - y + 1 = 0$ to make x the subject

$$x = \frac{y-1}{2}$$

x = ...
(2)

The Maths Society

20. Rearrange $8 + c = 3 - a$ to make a the subject.

$$a = -5 - c$$

a = ...

(2)

21. Make w the subject of $a = \dfrac{w - 2}{6}$

$$w = \sqrt{6a + 2}$$

w = ...

(2)

The Maths Society

22. Rearrange the formula $r = \sqrt{3w + t}$ to make t the subject

$$t = r^2 - 3w$$

t = ...

(2)

---

23. Rosie writes down Pythagoras' Theorem, $a^2 + b^2 = c^2$

Make a the subject

$$a = \sqrt{c^2 - b^2}$$

a = ...

(2)

---

24. Make p the subject of $ac = \dfrac{\pi}{p}$

$$p = \dfrac{\pi}{ac}$$

p = ...

(2)

25.　Rearrange $v^2 = u^2 + 2as$ to make s the subject.

$$s = \frac{v^2 - u^2}{2a}$$

s = ...

(2)

26.　Rearrange $w = \sqrt[3]{5y - 8}$ to make y the subject.

$$y = \sqrt{\frac{w^3 - 8}{5}}$$

y = ...

(3)

The Maths Society