

Rearranging Formulae

ANSWERS

1

Make x the subject of $y = 3x + 5$.

$$x \rightarrow \boxed{\times 3} \rightarrow \boxed{+ 5} \rightarrow y$$

$$x \leftarrow \boxed{\div 3} \leftarrow \boxed{- 5} \leftarrow y$$

backwards: undo each step in reverse order

Answer $x = \frac{y-5}{3}$

2

Make a the subject of $P = 2a + 7$.

$$a \rightarrow \boxed{\times 2} \rightarrow \boxed{+ 7} \rightarrow P$$

$$a \leftarrow \boxed{\div 2} \leftarrow \boxed{- 7} \leftarrow P$$

backwards: undo each step in reverse order

Answer $a = \frac{P-7}{2}$

3

Make x the subject of $y = 4x - 1$.

$$x \rightarrow \boxed{\times 4} \rightarrow \boxed{- 1} \rightarrow y$$

$$x \leftarrow \boxed{\div 4} \leftarrow \boxed{+ 1} \leftarrow y$$

backwards: undo each step in reverse order

Answer $x = \frac{y+1}{4}$

4

Make b the subject of $A = 5b + 2$.

$$b \rightarrow \boxed{\times 5} \rightarrow \boxed{+ 2} \rightarrow A$$

$$b \leftarrow \boxed{\div 5} \leftarrow \boxed{- 2} \leftarrow A$$

backwards: undo each step in reverse order

Answer $b = \frac{A-2}{5}$

5

Make x the subject of $y = \frac{x}{2} + 3$.

$$x \rightarrow \boxed{\div 2} \rightarrow \boxed{+ 3} \rightarrow y$$

$$x \leftarrow \boxed{\times 2} \leftarrow \boxed{- 3} \leftarrow y$$

backwards: undo each step in reverse order

Answer $x = 2(y-3)$

6

Make m the subject of $T = 6m - 4$.

$$m \rightarrow \boxed{\times 6} \rightarrow \boxed{- 4} \rightarrow T$$

$$m \leftarrow \boxed{\div 6} \leftarrow \boxed{+ 4} \leftarrow T$$

backwards: undo each step in reverse order

Answer $m = \frac{T+4}{6}$

7

The perimeter of a square is $P = 4s$.
Make s the subject.

divide both sides by 4

Answer $s = \frac{P}{4}$

8

$v = u + at$. Make t the subject.

$v - u = at$

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

Rearranging Formulae further practice

ANSWERS

9

Make b the subject of $a = 3b + c$

$$a - c = 3b$$

Answer $b = \frac{a-c}{3}$

10

Make x the subject of $y = 10 - x$

$$y + x = 10$$

Answer $x = 10 - y$

11

Make x the subject of $y = 2(x + 3)$

undo $\times 2$, then undo $+ 3$

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

12

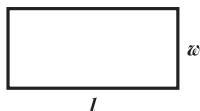
A taxi fare is C pounds for a journey of m miles, where $C = 2m + 3$.
Make m the subject. Then find m when $C = 19$.

Formula $m = \frac{C-3}{2}$

m 8

13

The perimeter of a rectangle is $P = 2l + 2w$. Make l the subject.



$$P - 2w = 2l$$

Answer $l = \frac{P-2w}{2}$

14

The area of a square is $A = s^2$, where s is the length of a side.
Make s the subject.

square root both sides

Answer $s = \sqrt{A}$

15

The area of a triangle is $A = \frac{bh}{2}$.
Make h the subject. Then find h when $A = 24$ and $b = 8$.

Formula $h = \frac{2A}{b}$

h 6

16

Max makes x the subject of $y = 5x + 2$. He writes $x = \frac{y}{5} - 2$. Is Max right? Explain.

take away 2 first, then divide by 5

$$x = \frac{y-2}{5}$$

Answer No