

Simplifying expressions by collecting like terms

?

Terms involving the same variable can be collected together

Simplify
 $5x + 5 + y - 2x + 3$

$$= 5x + 2 + y - 2x + 3$$
$$= 5x - 2x + y + 2 + 3$$
$$= 3x + y + 5$$

?

Terms involving only numbers can be collected together



Try it yourself



Standard

1. Simplify $2p + 4 + 3p$

2. Simplify $9x + 4y + 2 + 3y - 2x$

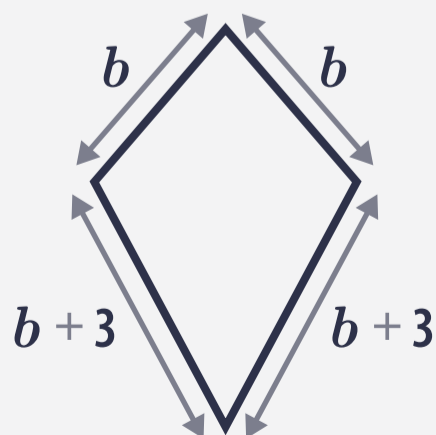
3. Simplify $6a + 8 - 6a + 2d$

4. Simplify $2a + 2b + 3a - 5b$

Problem solving

1. Write an expression, in terms of b , for the perimeter of this kite.

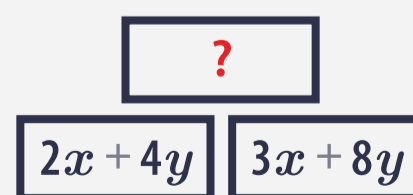
Simplify your answer fully.



2. In this pyramid, the expression in the top brick is found by adding together the expressions in the two bricks below it.

What expression should replace the question mark?

Give your answer as simply as possible.



Solving equations using tramlines

?

To solve an equation, we need to get x on its own

Solve
 $2x + 1 = 7$

-1	$2x + 1 = 7$	-1
	$2x + 1 - 1 = 7 - 1$	
	$2x = 6$	
$\div 2$	$2x \div 2 = 6 \div 2$	$\div 2$
	$x = 3$	

Remember: always do the same operation to both sides of the equation

?

?

Check your answer - substitute the answer back into the equation

$$\begin{aligned} 2x + 1 &= 2 \times 3 + 1 \\ &= 6 + 1 \\ &= 7 \end{aligned}$$



Try it yourself



Standard

1. Solve $3a - 10 = 5$

2. Solve $\frac{d}{2} + 7 = 13$

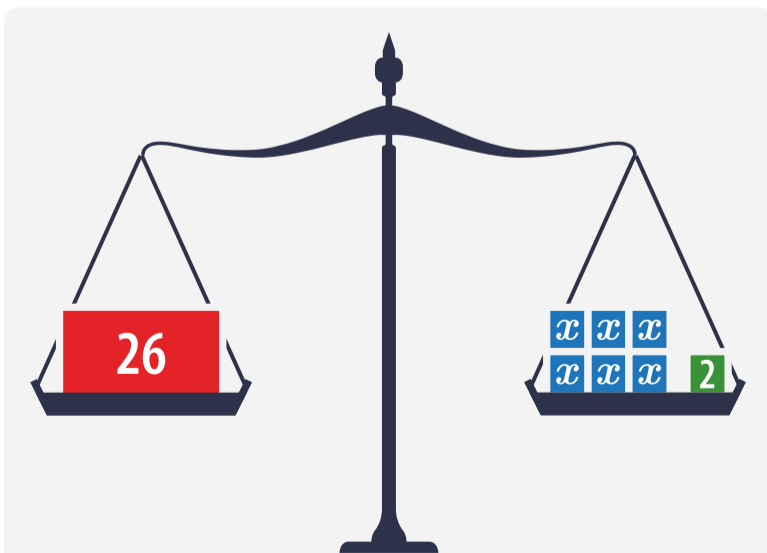
3. Solve $3(x + 2) = 18$

4. Solve $4y + 5 = 17 - 2y$

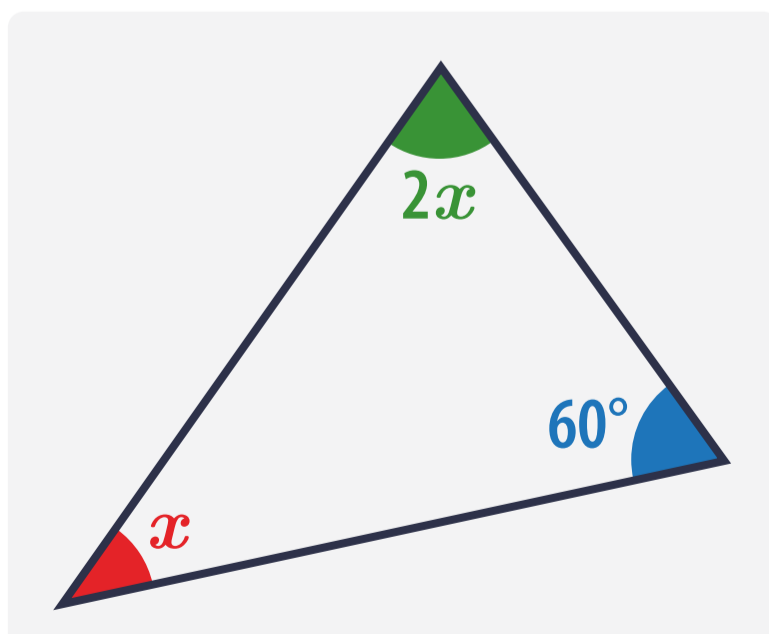
Problem solving

1. The scales are balanced.

what is the value of x ?



2. Calculate the value of x .



Multiplying and dividing by powers of 10

$\times 10$ moves the digits left by 1 column

	Th	H	T	U	$\cdot \frac{1}{10}$
48			4	8	
$\times 10$		4	8	0	

$\div 10$ moves the digits right by 1 column

	T	U	$\cdot \frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
48	4	8			
$\div 10$		4	$\cdot 8$		

$\times 100$ moves the digits left by 2 columns

	Th	H	T	U	$\cdot \frac{1}{10}$
48			4	8	
$\times 100$	4	8	0	0	

$\div 100$ moves the digits right by 2 columns

	T	U	$\cdot \frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
48	4	8			
$\div 100$		0	$\cdot 4$	8	



Try it yourself



Standard

1. Work out 96×10

2. Calculate $721 \div 100$

3. Work out 23.1×100

4. What is 7.05×1000 ?

Problem solving

1. Which operation completes the calculation below?

$5.8 \square = 580$

$\times 10$

$\times 100$

$\times 1000$

$\div 10$

$\div 100$

$\div 1000$

2. Convert 2193 millimetres into litres.

Volume in litres = volume in millilitres $\div 1000$

