

Algebra and measures

Question 1

Can you solve these equations? The first one has been done for you.

a $3p + 5 = 23$

$3p$	$= 18$
p	$= 6$

b $6m + 7 = 43$

$6m$	$=$
m	$=$

c $5y - 15 = 30$

	$=$
y	$=$

d $10m - 13 = 57$

	$=$
m	$=$

e $\frac{a}{4} + 3 = 9$

	$=$
a	$=$

f $\frac{t}{3} - 2 = 16$

	$=$
t	$=$

g $8h + 4 = 76$

	$=$
h	$=$



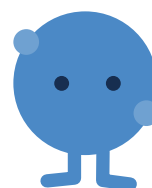
Question 2

Can you solve this problem?

I am thinking of a number, n .

When I multiply my number by 6 and add 35 to it, the answer is 101.

What is my number? Can you write an equation to show this?



Can you write your own number problem and write an equation for it?

Question 3

Can you solve these equations?

$$\text{a } 3x + 9 = -6$$

$$\begin{aligned} &= \frac{\partial}{\partial x_i} \left(\frac{1}{2} \sum_{j,k=1}^n g_{jk}(x) \frac{\partial f}{\partial x_j} \frac{\partial f}{\partial x_k} \right) \\ &= \frac{1}{2} \sum_{j,k=1}^n \left(\frac{\partial g_{jk}}{\partial x_i} \frac{\partial f}{\partial x_j} \frac{\partial f}{\partial x_k} + g_{jk} \frac{\partial^2 f}{\partial x_i \partial x_j} \frac{\partial f}{\partial x_k} + g_{jk} \frac{\partial f}{\partial x_j} \frac{\partial^2 f}{\partial x_i \partial x_k} \right) \end{aligned}$$

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b $4y - 15 = 1$

	=	
	=	

c $\frac{z}{7} - 1 = 9$

	=	
	=	

d $\frac{x}{7} + 1 = 3$

	=	
	=	

e $20y + 1 = 17$

	=	
	=	

f $\frac{2z}{7} - 1 = -3$

	=	
	=	
	=	

g $32 = 16 - 8a$

	=	
	=	
	=	



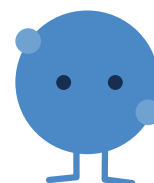
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Question 4

Can you solve this problem?

The French bakery, House of Pain, needs to make p baguettes. Each baguette requires 325 g of flour.

The bakery has 500 g of flour in the shop. Choose an expression for the amount of flour that they need to buy.



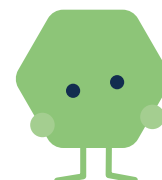
☐ $\frac{p}{325} + 500$

☐ $325p - 500$

☐ $\frac{p}{325} - 500$

☐ $325p + 500$

The bakery buys a 6 kg bag of flour. How many baguettes can they bake?



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Question 5

A rectangle has an area of 18cm^2 . If the length and width of the rectangle are whole numbers, what are the possible lengths and widths of the rectangle?

Length	width

The perimeter of the rectangle is the same as the area. Does this change what rectangles are possible? If so, how?



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Question 6

Two numbers, x and y , when added together have a value of 50. Both x and y are even and are greater than 10. What are the possible values of x and y ?

x	y

When multiplied together, $xy = 544$. How many possible values are there for x and y now?



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Question 7

Convert these measurements to the given unit.

a 5,000 m = km

b 11.5 km = m

c 225 cm = m

d 0.5 km = m

e 50 cl = ml

f 4,500 ml = litres

g 78,521 m = km

h 42 cm = m

i 89 cm = mm

j 400 ml = litres

k 5 litres = ml

l 2,451 g = kg



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Question 8

Can you solve these word problems?

- a** Boxes on a shelf weigh 450g. The maximum weight the shelving unit can hold is 25kg. How many boxes can safely be stored on the shelving unit?

- b** A can of juice has a capacity of 330ml. If 10 litres of juice are needed, how many cans must be bought?

Question 9

If we know that 5 miles $\approx$ 8km, can you use this fact to help complete these statements:

10 miles $\approx$ km

miles $\approx$ 40km

32km $\approx$ miles

km $\approx$ 500 miles



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Question 10

Tom's family are going on holiday. He and his parents are 65 miles away from their campsite. His grandparents are 100km away. Who is closer to the campsite?

