

## Starter

1. Find the mode, median and range of the following numbers

68, 89, 57, 73, 75, 69, 76, 89, 65, 91

2. If  $f = 4$ ,  $g = (-1)$  and  $h = 6$ , evaluate

a.  $6g + h$

b.  $fh - 2g$

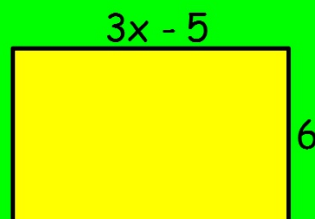
c.  $(f - g)^2 - 2h$

3. During a concert, 3 clarinets begin by hitting a B flat. From this note, the first clarinet hits the B flat note every 4 beats, the second clarinet every 5 beats, and the third every 10 beats.

After how many beats will all three clarinetists hit B flat at the same time again?

4. a. Find a simplified expression for the area of this shape

- b. If the area =  $24 \text{ cm}^2$ , find  $x$ .



## Starter

- Express 98 as a product of prime factors.
- If  $a = (-2)$ ,  $b = (-3)$  and  $c = 5$ , evaluate
  - $ac + 3b$
  - $c^2 - (ab)^2$
  - $(b - c)^2 - a$
- Complete each table and find a formula connecting the letters.

a.

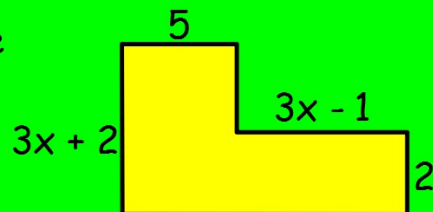
A	1	2	3	4
B	8	9	10	

b.

P	4	5	6	7
Q	3	7	11	

- Find a simplified expression for the perimeter of this shape.

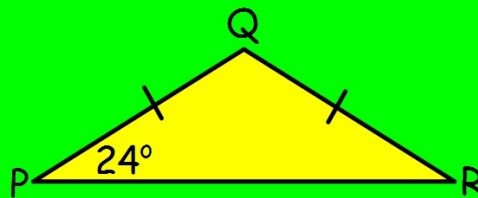
- If the perimeter = 24 m, find  $x$ .



## Starter

1. Find the volume of a cuboid with length 15 cm, breadth 6 cm, and height 2.5 cm.

2. Find the size of angle PQR.



3. If  $x = 2$ ,  $y = 8$  and  $z = (-3)$ , evaluate

a.  $xy - 3z$

b.  $x^2z + 2z$

c.  $3(x - y)^2$

4. This table shows the cost of hiring a lawn raker.

No. days hired	1	2	3	4
Cost (£s)	9	14	19	24

a. Find a formula for determining the cost of hiring the lawn raker.

b. How much would it cost to hire the lawn raker for a week?

c. Mr Smith paid £54 to hire the lawn raker.

For how long did he hire it?

## Starter

1. Multiply out the brackets and simplify

a.  $3(x - 5) - 2(3x + 8)$

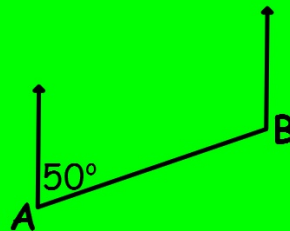
b.  $10 + 7(x - 4) - 2(3x - 1)$

2. Find the height of a cuboid with volume  $150 \text{ mm}^3$ , length  $2.5 \text{ mm}$ , and breadth  $6 \text{ mm}$ .

3. Using this diagram,

a. State the bearing of B from A

b. Calculate the bearing of A from B



4. David earns  $60\text{p}$  for every 10 papers that he delivers.

If he delivers 55 papers on Monday, 20 papers on Tuesday, and 75 papers on Wednesday, how much money has he earned in total?

## Starter

1. Multiply out the brackets and simplify

a.  $8(x - 2) - 3(2x + 5) + 5$

b.  $2x(x + 1) + 10(x^2 - 5)$

2. Find

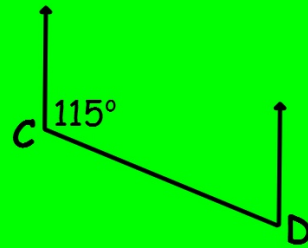
a.  $\frac{3}{7}$  of £1638

b. 15% of £280

3. Using this diagram,

a. State the bearing of B from A

b. Calculate the bearing of A from B



4. The following equation can be used to calculate the energy value of foods.

$$\text{Energy value (kJ per gram)} = 0.42 \times \text{temperature rise (}^{\circ}\text{C)}$$

If a temperature rise of  $12^{\circ}\text{C}$  is observed when 1 g of potato is burned, what is its energy value?