Mesosphere

Section One

Section Two

Final answer

Literacy

Key skills

Problem solving

Speed & density

Exam question

Area of a circle

Investigate

Start with the number 2.5 and follow it through the set of instructions.

Multiply by 10		**Multiply by 8**		**Multiply by 20**	
Add 7		**Divide by 5**		**Subtract 1**	
Divide by 8		**Subtract 5**		**Square root**	
Square it		**Divide by 5**		**Divide by 0.5**	
Subtract 17		**Add 1**		**Divide by 56**	
Add 3.5		**Multiply by 5**		**Divide by 0.25**	
Final answer		**Final answer**		**Final answer**	

1 Complete the table of values for $y = 3 - x$

x		-2	0	1	2		15	99
y	100					-4		

2 $\dfrac{2}{7} + \dfrac{3}{5} =$

3 Calculate the value of x.

$x°$

$130°$

$x°$
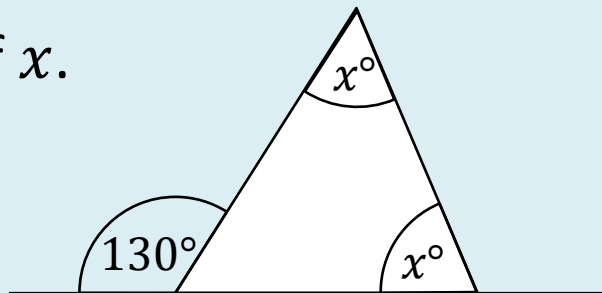
Calculate the distance.

1   $6mph$ for $4\ hours$

2   $15m/s$ for $2\ seconds$

3   $20kph$ for $30\ minutes$

Calculate the speed.

A $40\ miles$ in $30\ mins$

B $800m$ in $5\ mins$

C $2.4km$ in $40\ mins$

Calculate the time.

$15\ miles$ at $50mph$

$600m$ at $3kph$

$2.5km$ at $20m/s$

Calculate the mass.

4   $50cm^3$ with a density of $10g/cm^3$

5   $8m^3$ with a density of $2kg/m^3$

6   $10\ litres$ with a density of $400g/l$

Calculate the density.

D $125cm^3$ weighing $2kg$

E $4m^3$ weighing $10tn$

F $6l$ weighing $30\ lb$

Calculate the volume.
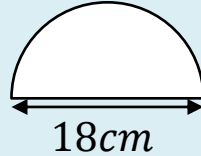
$5.5tn$ of density $2kg/m^3$

$0.5kg$ of density $25g/cm^3$

$0.25kg$ of density $0.2kg/l$

Calculate the area of each shape.

1 $4cm$
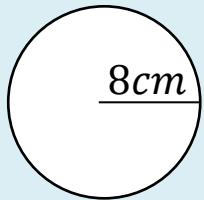
A $18cm$

$60°$ $4cm$

2 $8cm$

B $1cm$

$40°$ $1.5cm$

3 $1.5cm$

C $2.5cm$

$6cm$ $240°$

4 $20cm$

D $120°$ $12cm$

$140°$ $0.7cm$
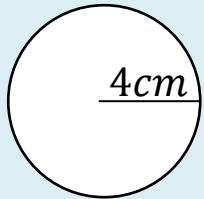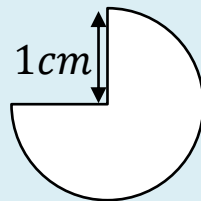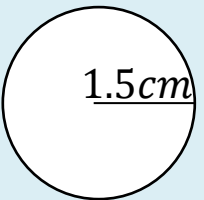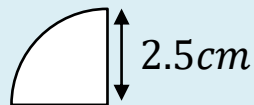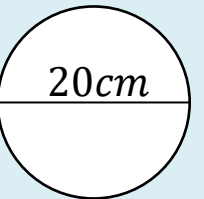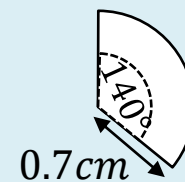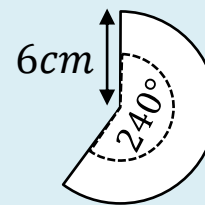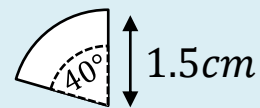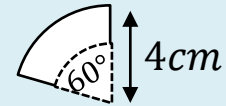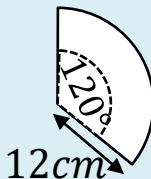
Reflection

Reflect on the first section.

WWW:

EBI:

Down

1. The mean of -1 and 1
2. The product of 0.5 and 0.5
3. 100 squared divided by 10
4. The difference between 10 and -2
6. HCF of 10 and 15
7. 10.05 rounded to the nearest integer

Across
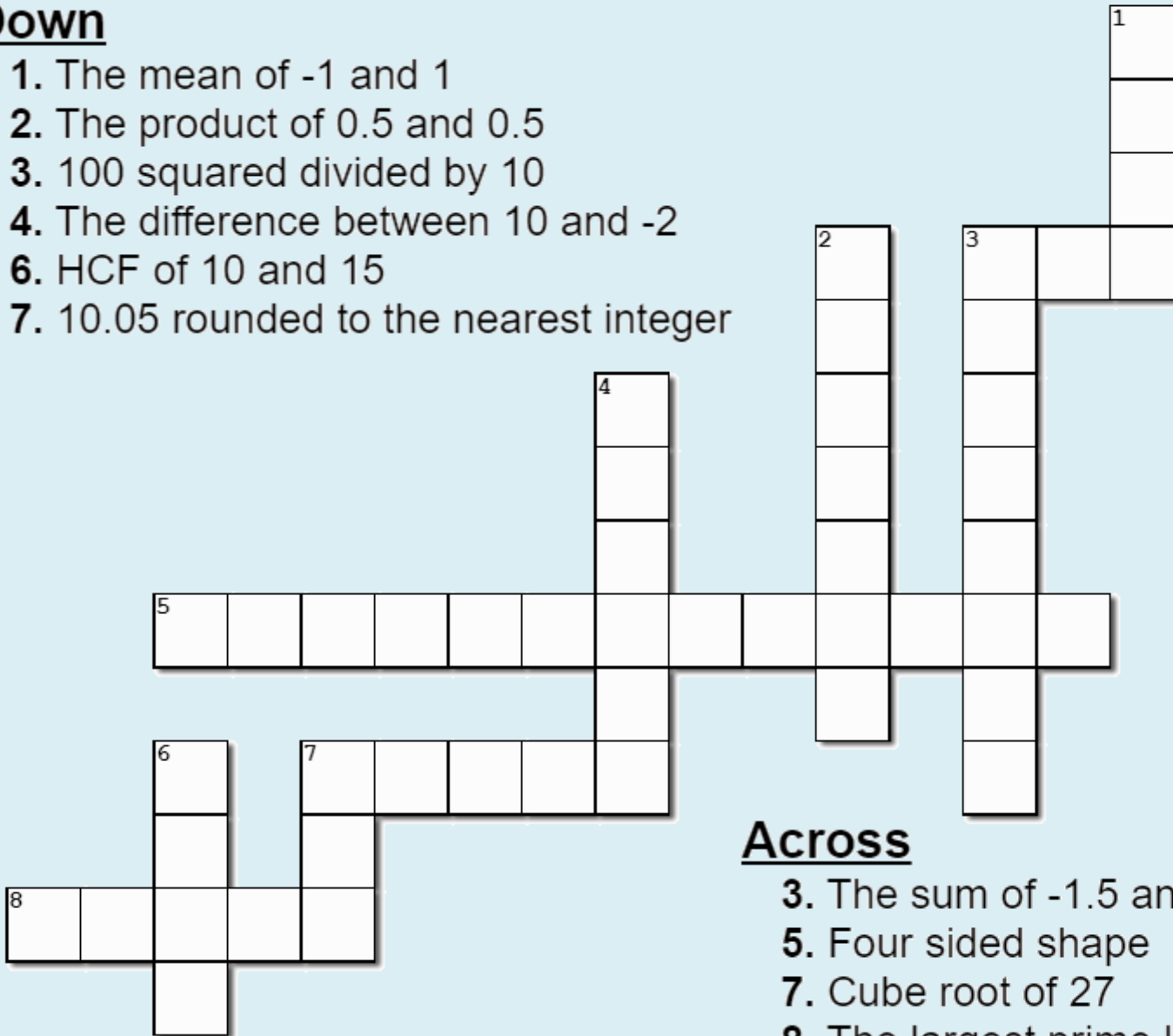
3. The sum of -1.5 and 3.5
5. Four sided shape
7. Cube root of 27
8. The largest prime less than 10

Problem solving

1 Which of the following statements is false?

A   12 is a multiple of 2

D   12 345 is a multiple of 5

B   123 is a multiple of 3

E   123 456 is a multiple of 6

C   1 234 is a multiple of 4

2 Grandma has baked a cake for her grandchildren. She does not know if today 3, 5 or all 6 grandchildren will come. Into how many pieces does she have to cut the cake in order to be sure all grandchildren present will get the same amount of cake?
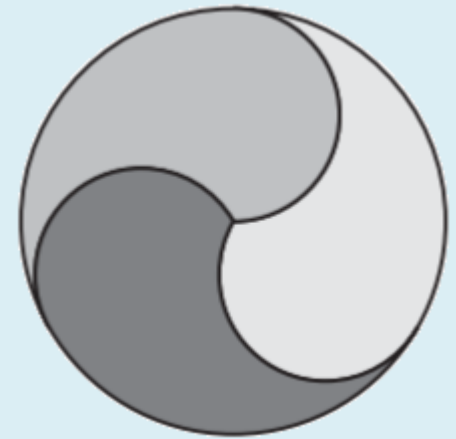
A 12   B 15   C 18   D 24   E 30

3 A circle of radius $18cm$ is divided into three identical regions by the three semicircles, as shown. What is the length of the perimeter of one of these regions?

$$C = \pi \times d$$

1 On Saturday, some adults and some children were in a theatre.
The ratio of the number of adults to the number of children was $5 : 2$
Each person had a seat in the Circle or had a seat in the Stalls.

$\frac{3}{4}$ of the children had seats in the Stalls.

117 children had seats in the Circle.

There are exactly 2600 seats in the theatre.

On this Saturday, were there people on more than 60% of the seats?
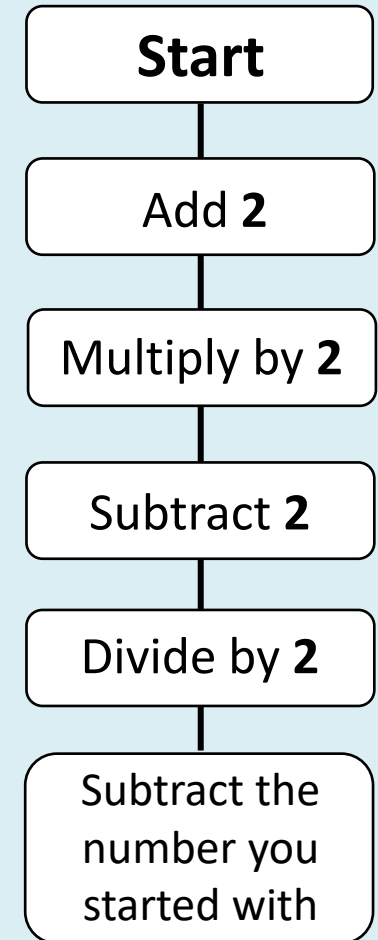You must show how you get your answer.

(5 marks)

Investigate

1 **Start** with a number between 1 and 10?

2 **Start** with any number?

3 Can you find a number where the answer is different?

4 Does it work when you start with fractions?

5 Does it work when you start with negative numbers?

6 Does it work when you start with zero?

7 Does it work when you change the order of operations?

8 Does it work when you change the number from a **2** to a **3**?

Start

Add **2**

Multiply by **2**

Subtract **2**

Divide by **2**

Subtract the number you started with

Well done for completing the lesson.

Reflection