Year 5 Mathematics Challenge

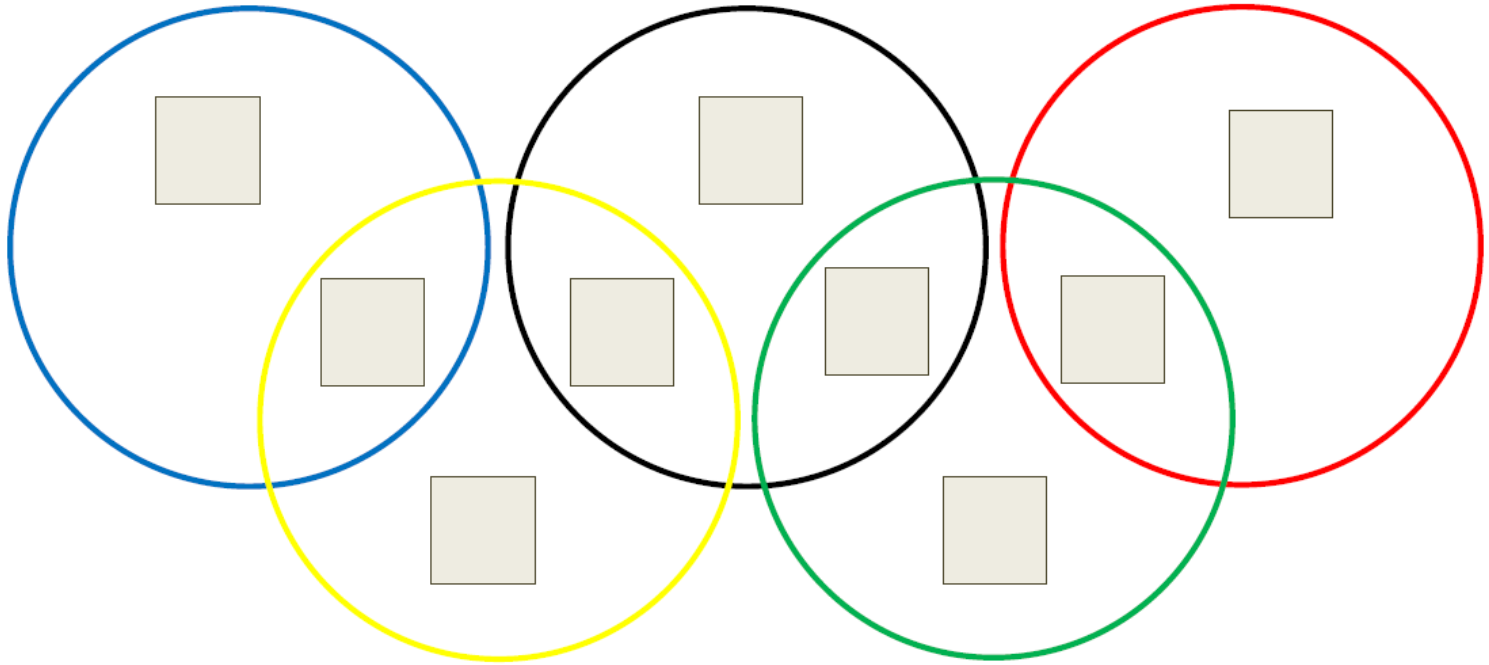
FINAL

Herts for Learning

Pre-rounds

Ring Totals

Place the below numbers into the rings so that the total of the numbers in **each ring** is the **same**.

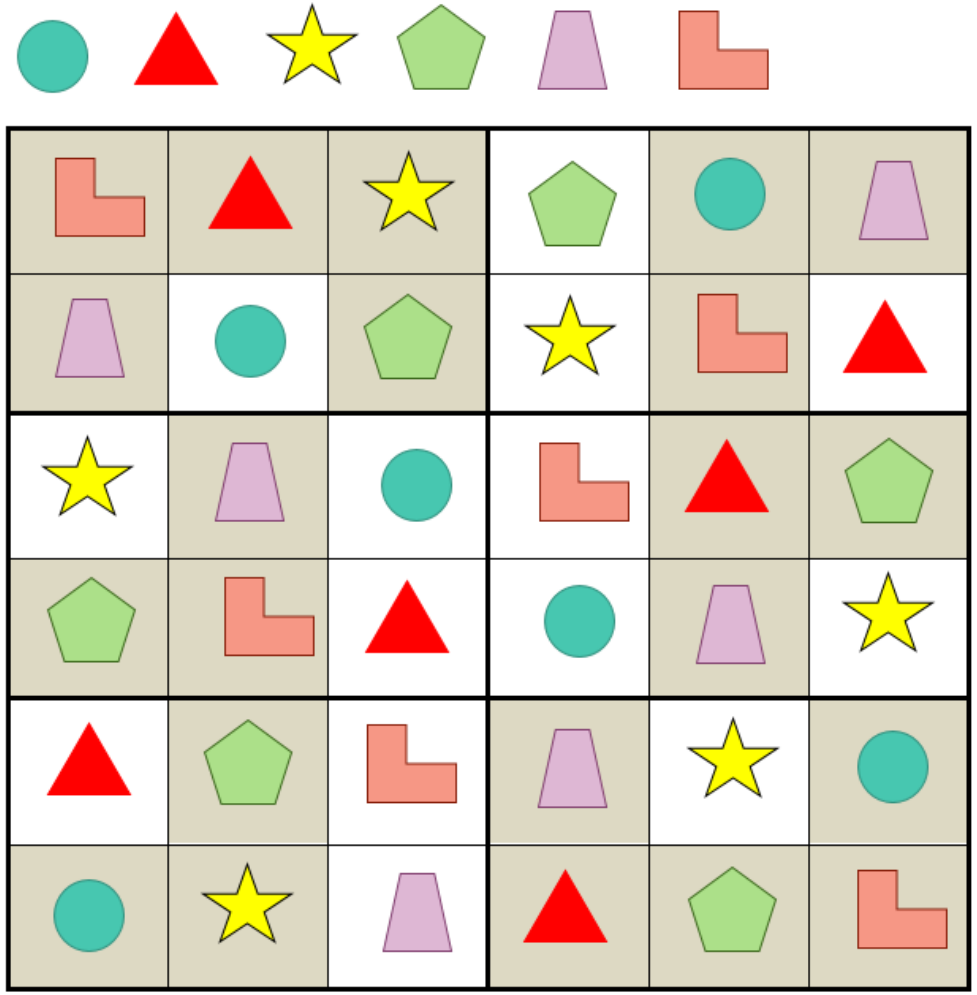


1 2 3 4 5 6 7 8 9

Pre-rounds

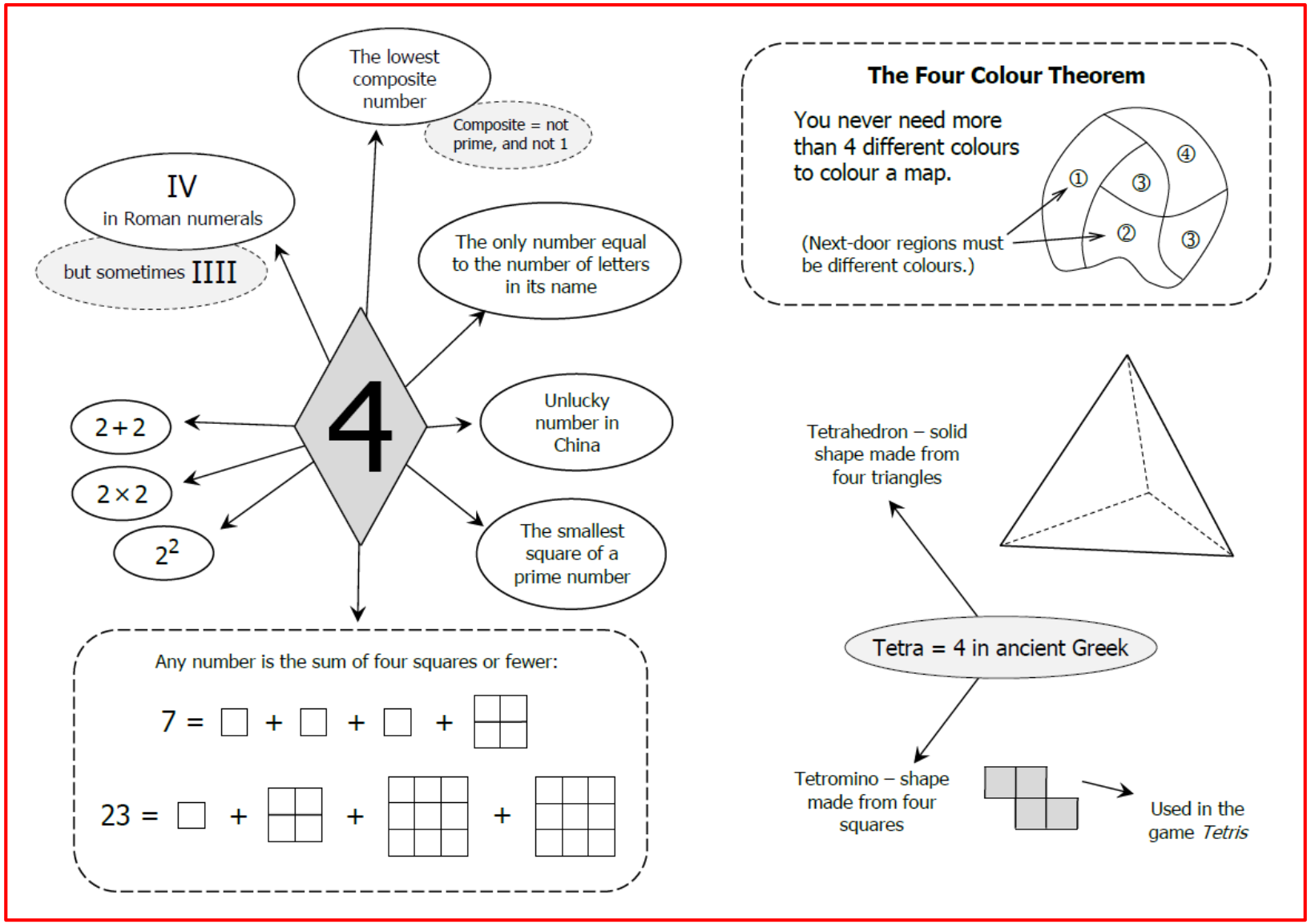
Fill the Grid – shapes solution

Fill the grid so that every column, every row and every 3 x 2 box contains 1 of each of these shapes:



Memory Round

Memory Round



Round 1

General Mathematics Questions

Herts for Learning

Round 1 **Question 1**

Work out:

$$20 + 20 + 20 \times 20$$

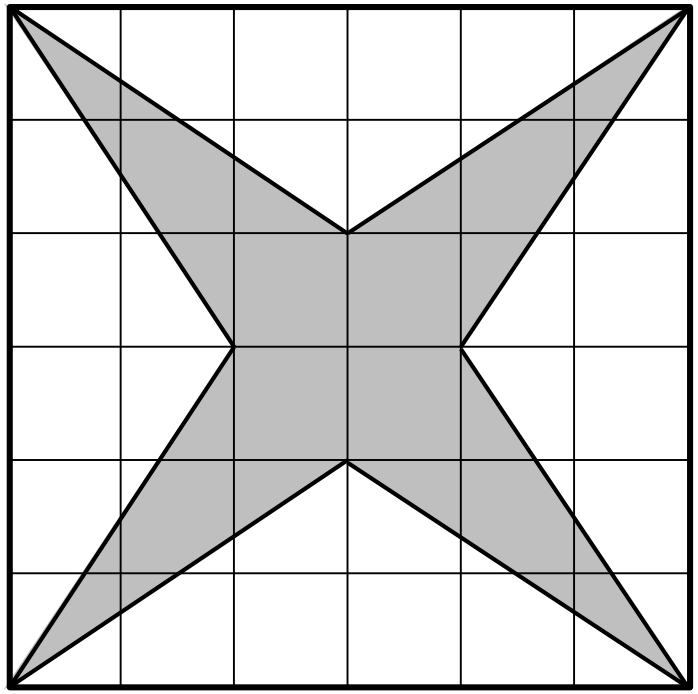
Round 1 **Question 2**

What is the sum of all the prime numbers less than 30?

Round 1

Question 3

What fraction of this square has been shaded?



Give the answer in its simplest form.

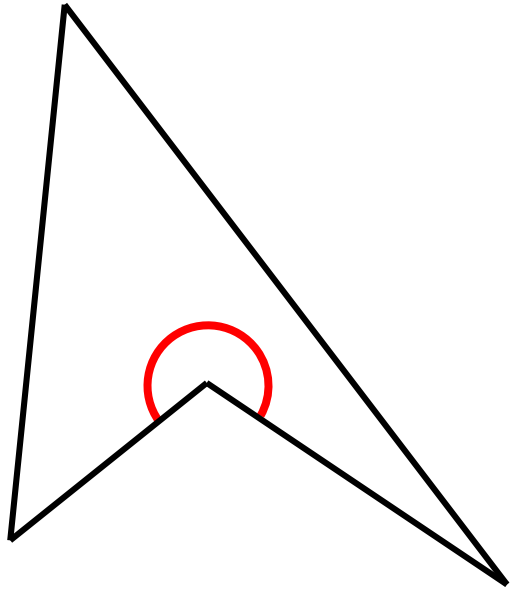
Round 1 **Question 4**

Work out:

$$4^3 \div 16^2$$

Round 1 **Question 5**

In this quadrilateral, one of the interior angles is a reflex angle.



It is impossible to draw a quadrilateral with more than one reflex angle.

What is the maximum number of reflex angles in a hexagon?

Round 1 **Question 6**

Jimmy has two caps: one red, one blue.

He has three shirts: one brown, one blue and one black.

He has three pairs of trousers: one red, one black and one green.

How many combinations of cap, shirt and trousers can Jimmy wear, if no two of them can be the same colour?

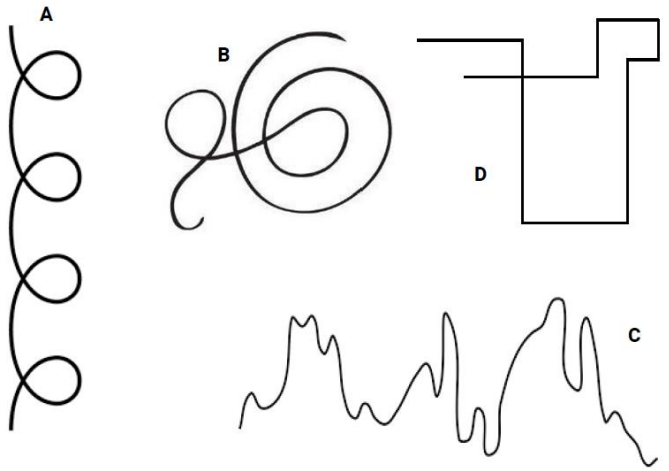
End of Round 1

Round 2

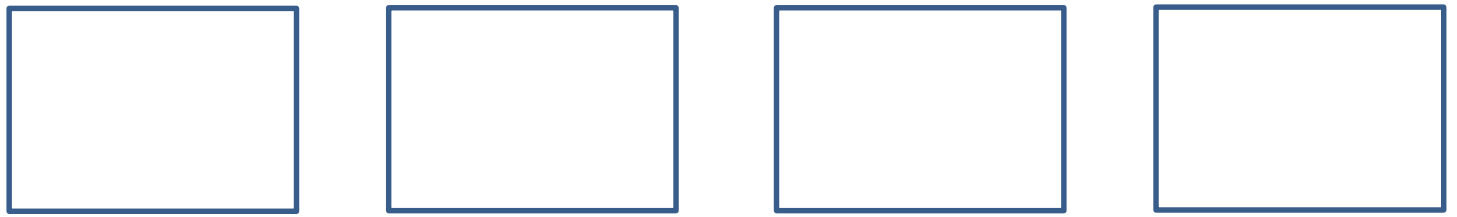
Estimation Round

Round 2 **Question 1**

Place the 4 lines in order from shortest to longest length.

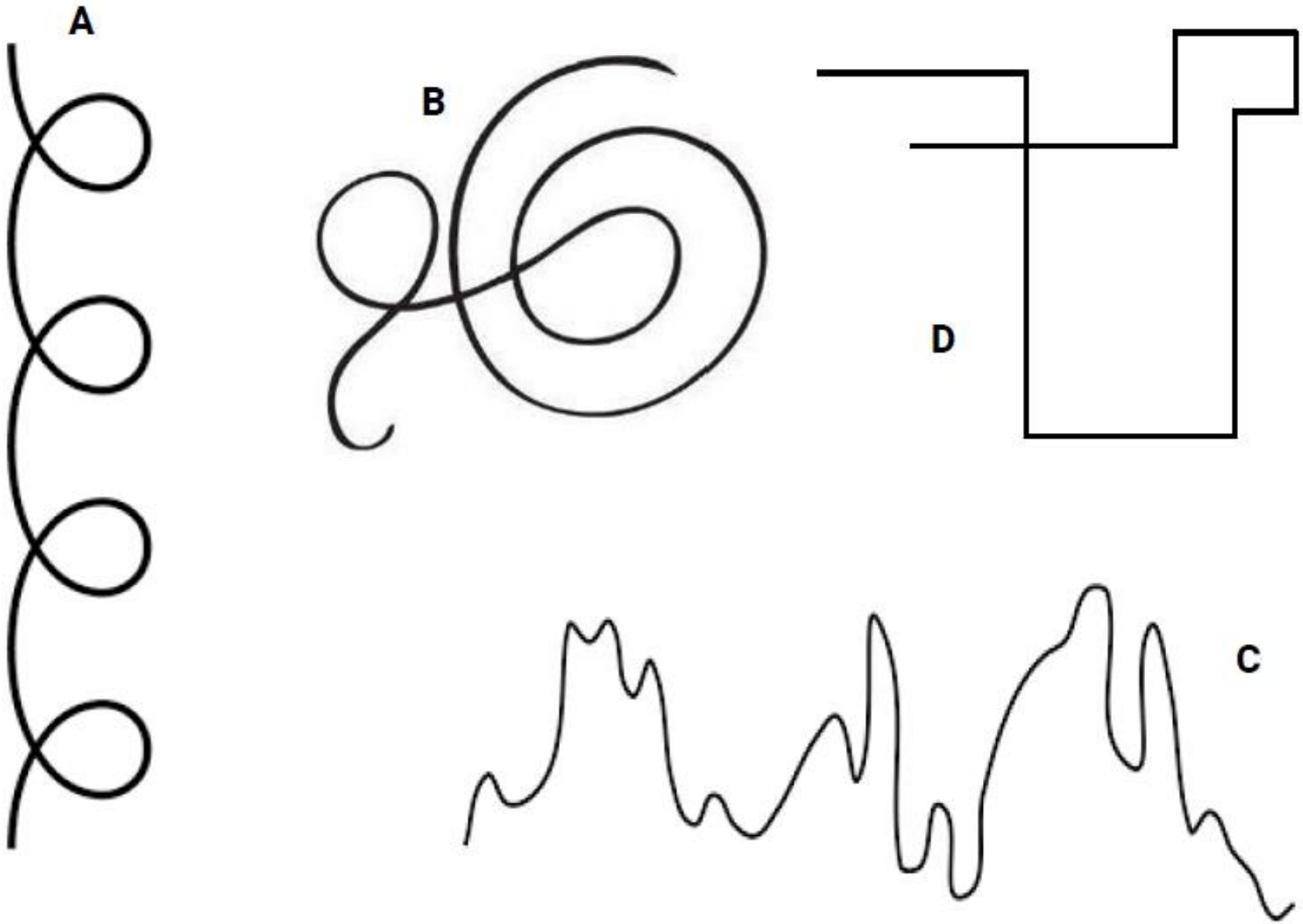


shortest longest



Round 2

Question 1



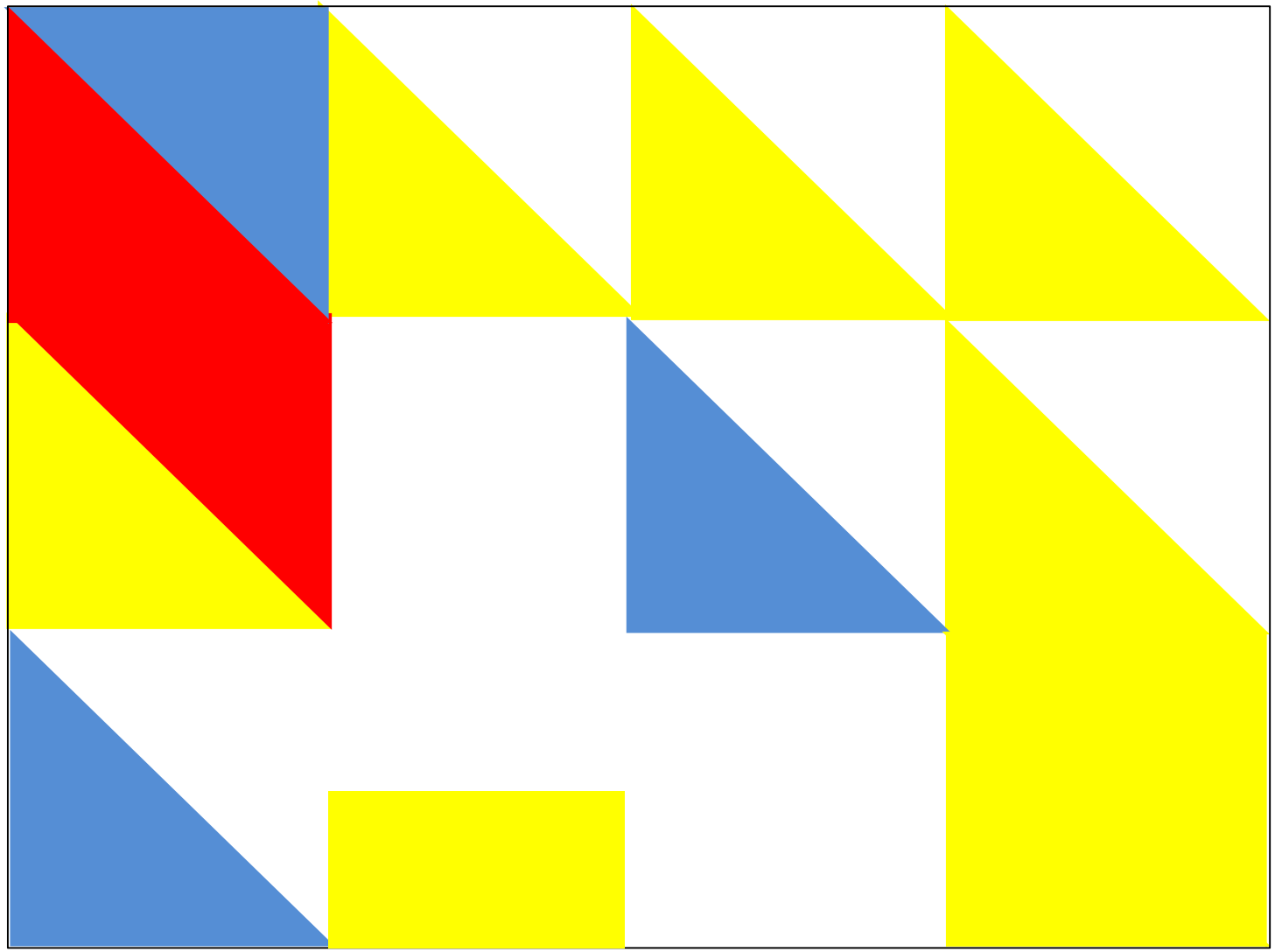
Round 2

Question 2

What fraction of this shape is shadowed yellow?

Round 2

Question 2



Round 2

Question 3

Here is a photo of a clock face.
It will disappear and then re-appear.
To the nearest second, estimate for how long it disappears.

Round 2 **Question 4**

To the nearest multiple of 5, approximately, how many chilli peppers are there?

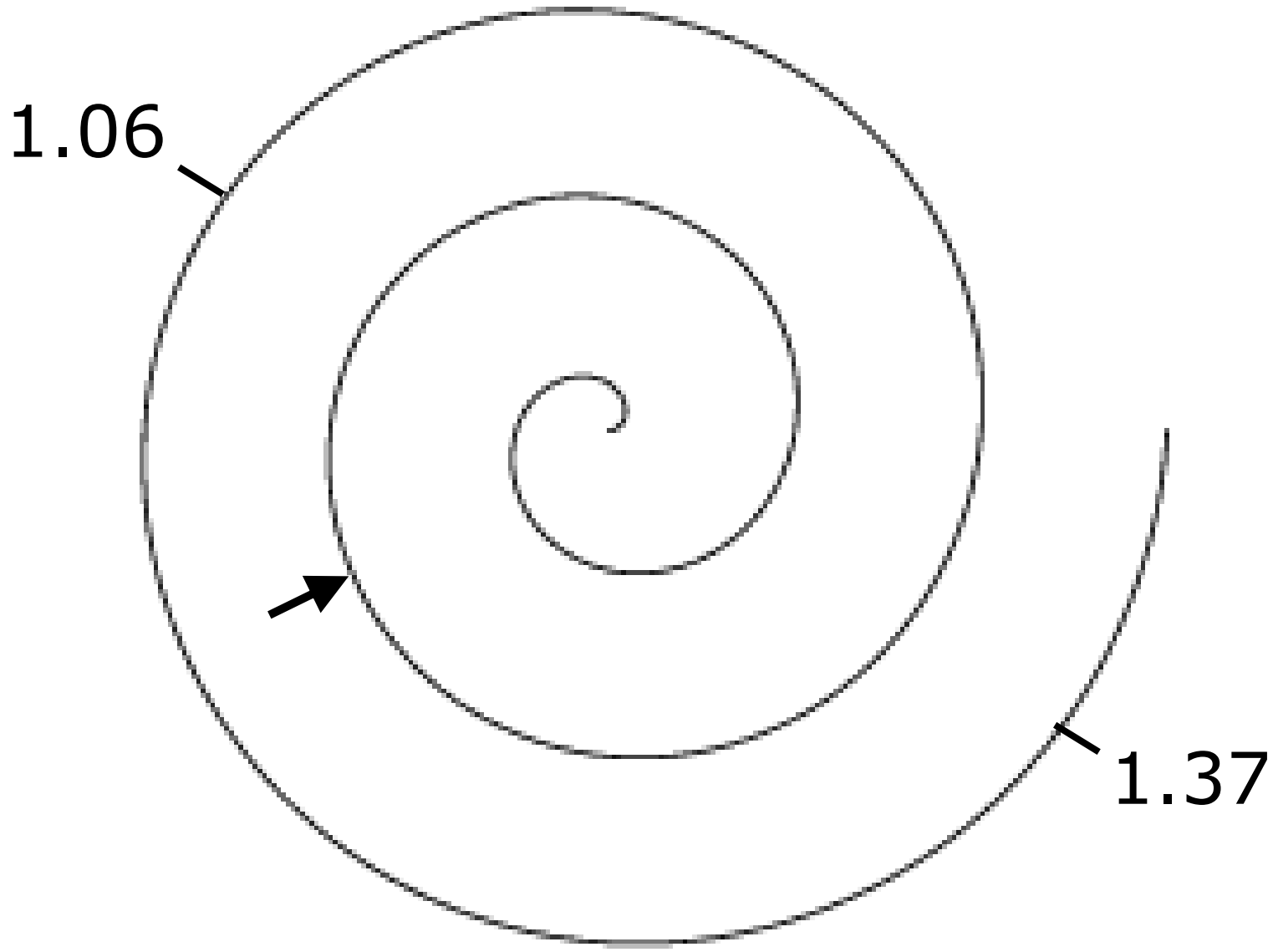
Round 2

Question 5

What number is represented by the arrow on this number line?

Round 2

Question 5



End of Round 2

Round 3

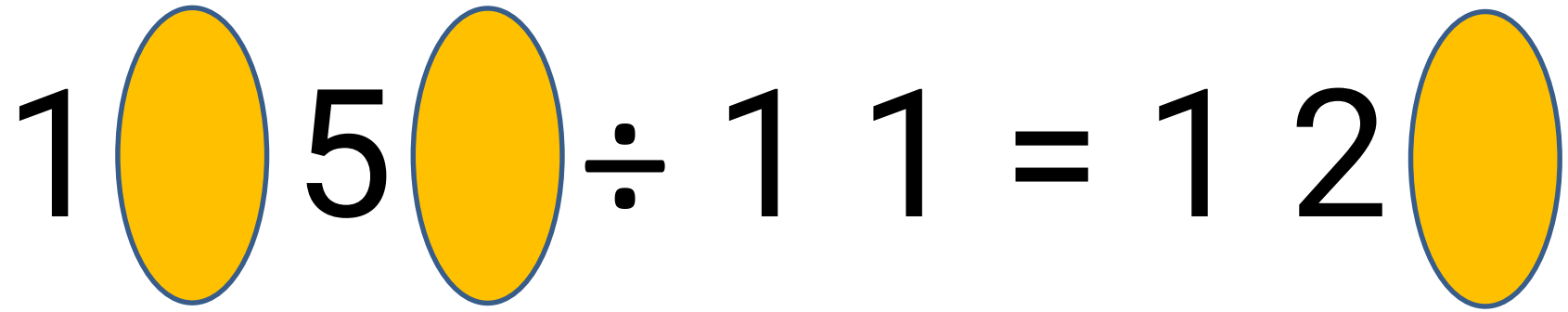
General Mathematics Questions

Herts for Learning

Round 3

Question 1

The hidden digits are all the same. What are they?



Round 3 **Question 2**

Here are the first five numbers in a sequence:

24.8	22.45	20.1	17.75	15.4

If it were continued, what would be the 9th number?

Round 3

Question 3

Which container has the **least** amount of juice left?

568ml

A

Half empty

425ml

B

138 ml sipped

340ml

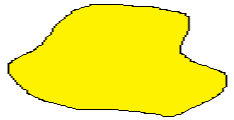
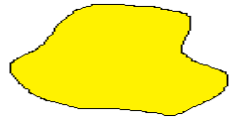
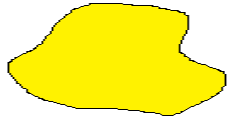
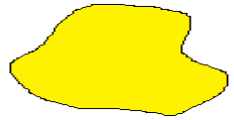
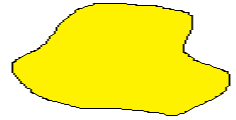
C

15% spilt

Round 3

Question 4

What time did **train D** **arrive** in London?

Station	*Train A*	*Train B*	*Train C*	*Train D*
Manchester	09:37	10:17	11:35	12.41
Birmingham	10:51		12:49	
Milton Keynes		12:19		14:43
London	12:26		14:24	

Round 3 **Question 5**

Order these calculations from **smallest to largest answer.**

a) $49.2 \div 6 =$

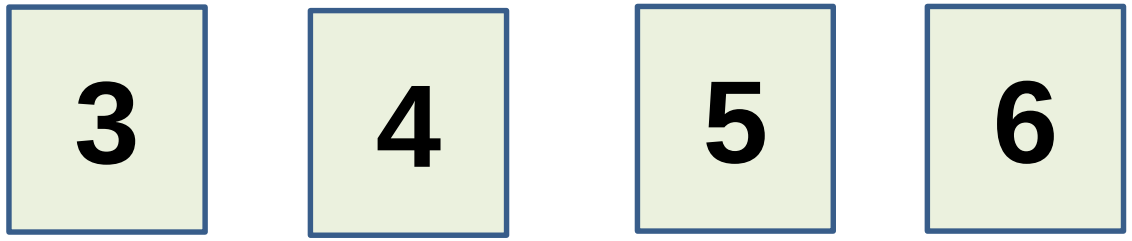
b) $15.3 - 2.75 - 4.25 =$

c) $3 \times 0.45 \times 6 =$

d) $4.62 + 2.9 + 0.83 =$

Round 3 **Question 6**

Using the below digits only once, make this number sentence true.



$$\frac{\square}{\square} - \frac{\square}{\square} = \frac{3}{10}$$

End of Round 3

Round 1
ANSWERS

Herts for Learning

Round 1

Question 1

Work out:

$$20 + 20 + 20 \times 20$$

Answer: 440

Round 1 **Question 2**

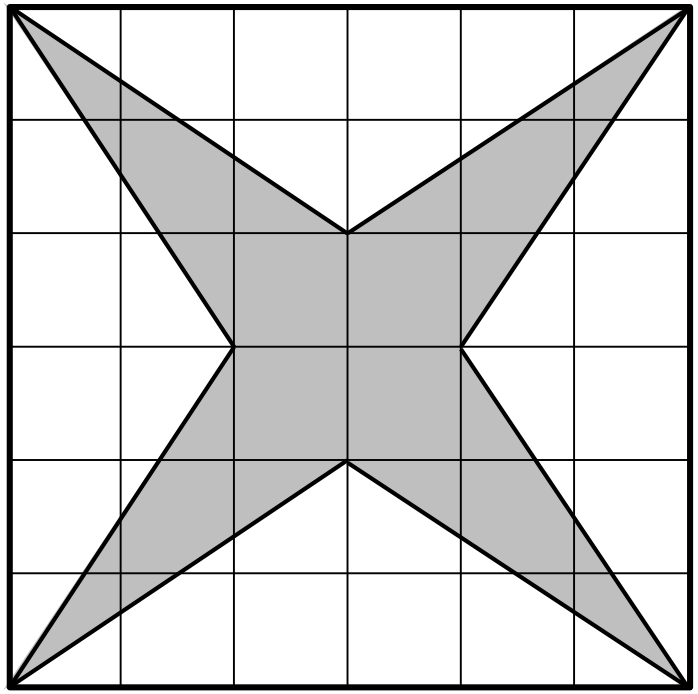
What is the sum of all the prime numbers less than 30?

Answer: 129

Round 1

Question 3

What fraction of this square has been shaded?



Give the answer in its simplest form.

Answer: $\frac{1}{3}$

Round 1 **Question 4**

Work out:

$$4^3 \div 16^2$$

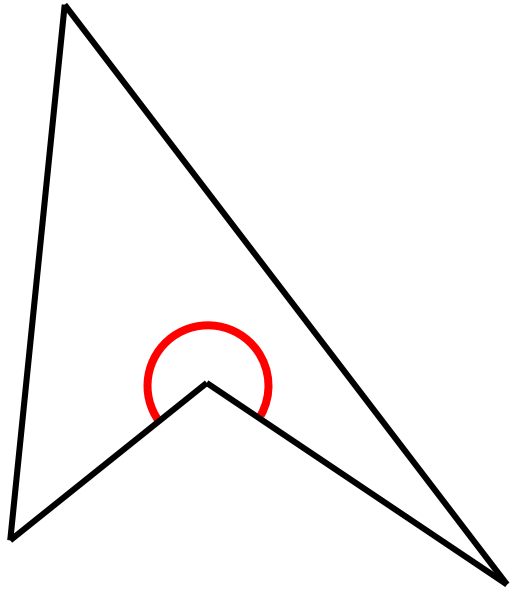
Answer: $\frac{1}{4}$ **or 0.25**

Round 1

Question 5

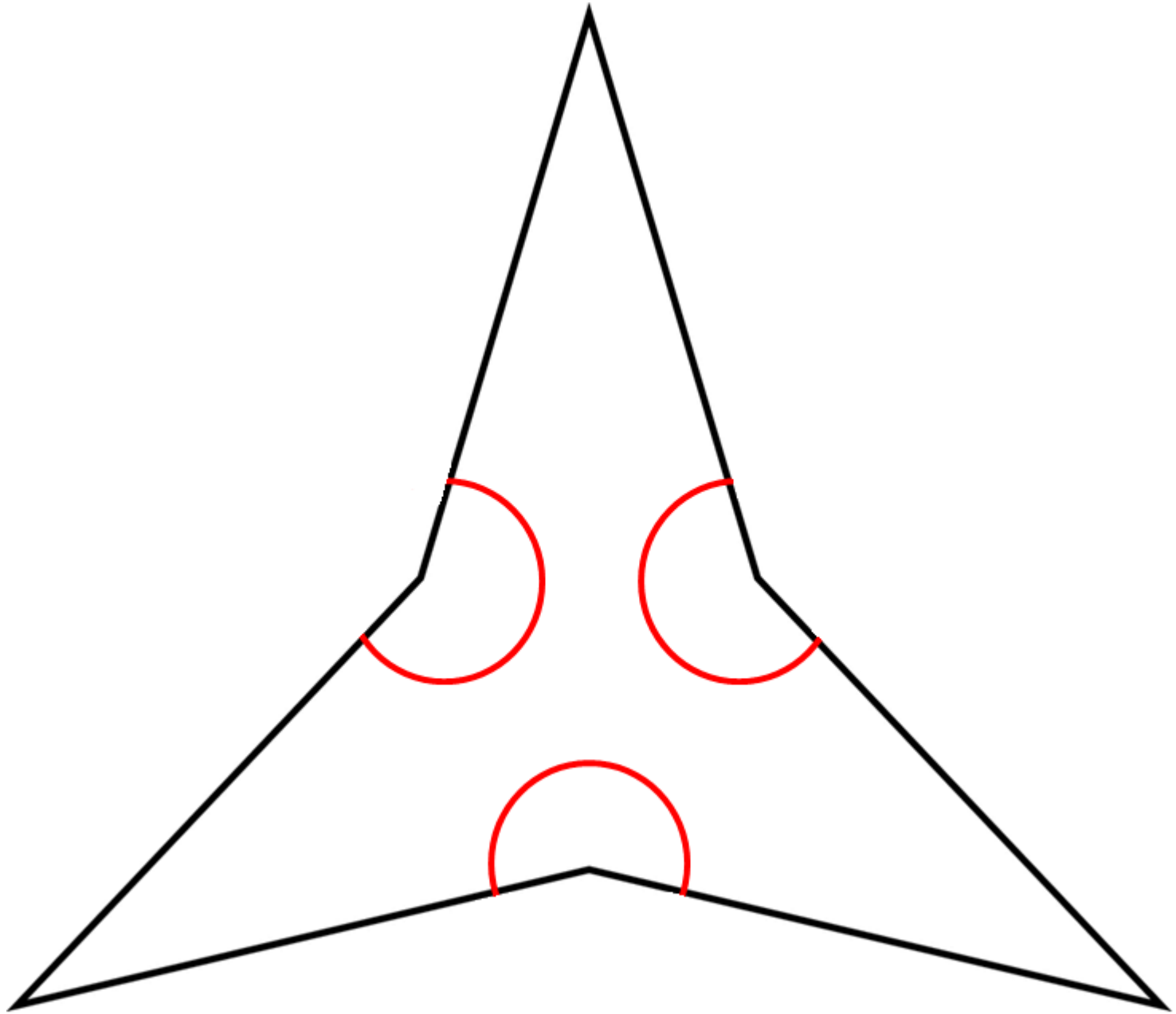
In this quadrilateral, one of the interior angles is a reflex angle.

It is impossible to draw a quadrilateral with more than one reflex angle.



What is the maximum number of reflex angles in a hexagon?

Answer: 3



Round 1 **Question 6**

Jimmy has two caps: one red, one blue.

He has three shirts: one brown, one blue and one black.

He has three pairs of trousers: one red, one black and one green.

How many combinations of cap, shirt and trousers can Jimmy wear, if no two of them can be the same colour?

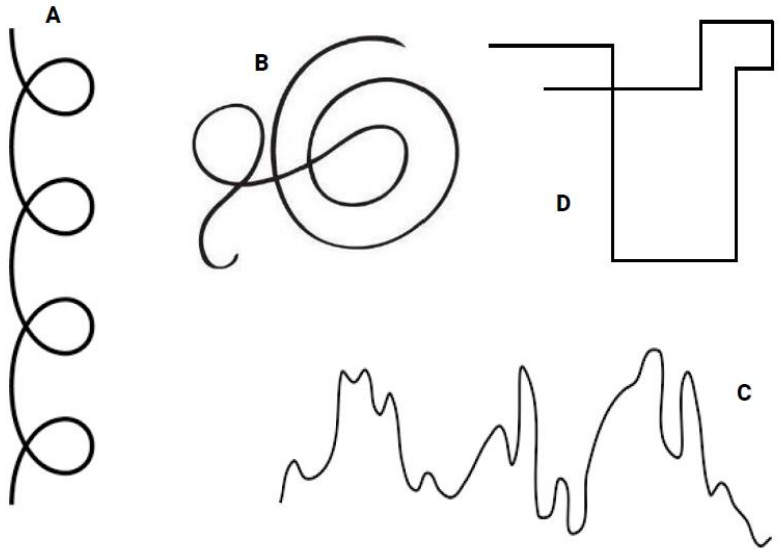
Answer: 10

Round 2
ANSWERS

Herts for Learning

Round 2 **Question 1**

Place the 4 lines in order from shortest to longest length.



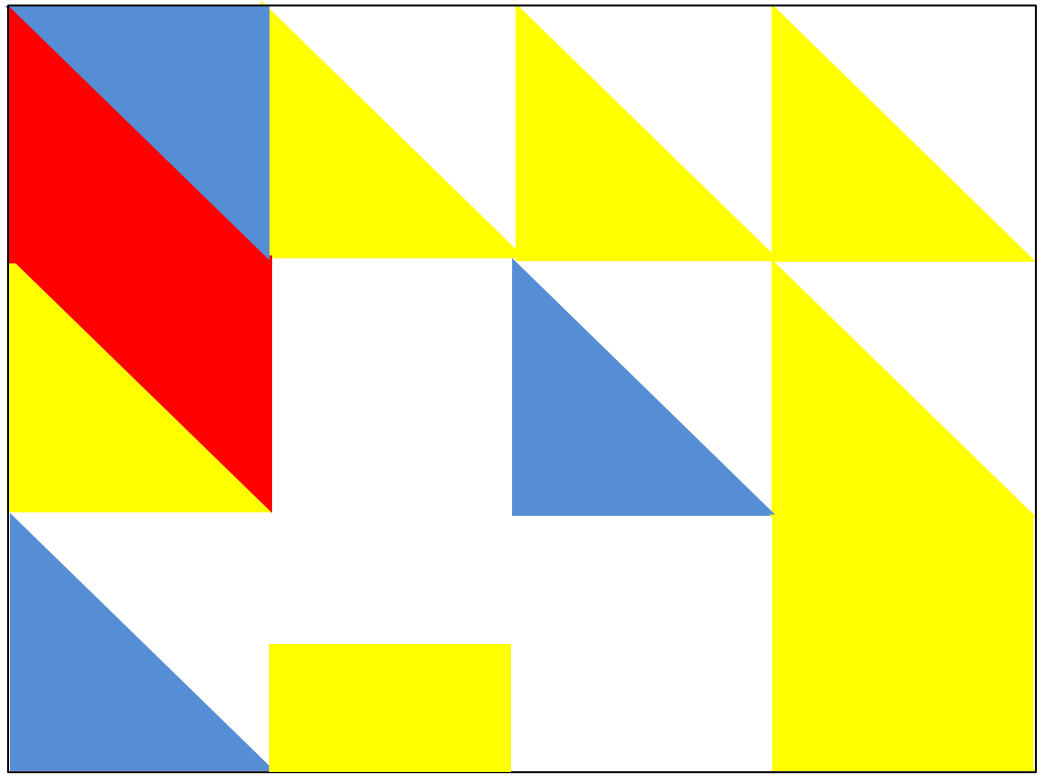
shortest longest

D	**A**	**B**	**C**

Round 2

Question 2

What fraction of this shape is shadowed yellow?



Answer: $\frac{1}{3}$

(or equivalent)

Round 2

Question 3

Here is a photo of a clock face.
It will disappear and then re-appear.
To the nearest second, estimate for
how long it disappears.

Answer: 32 seconds

Round 2

Question 4

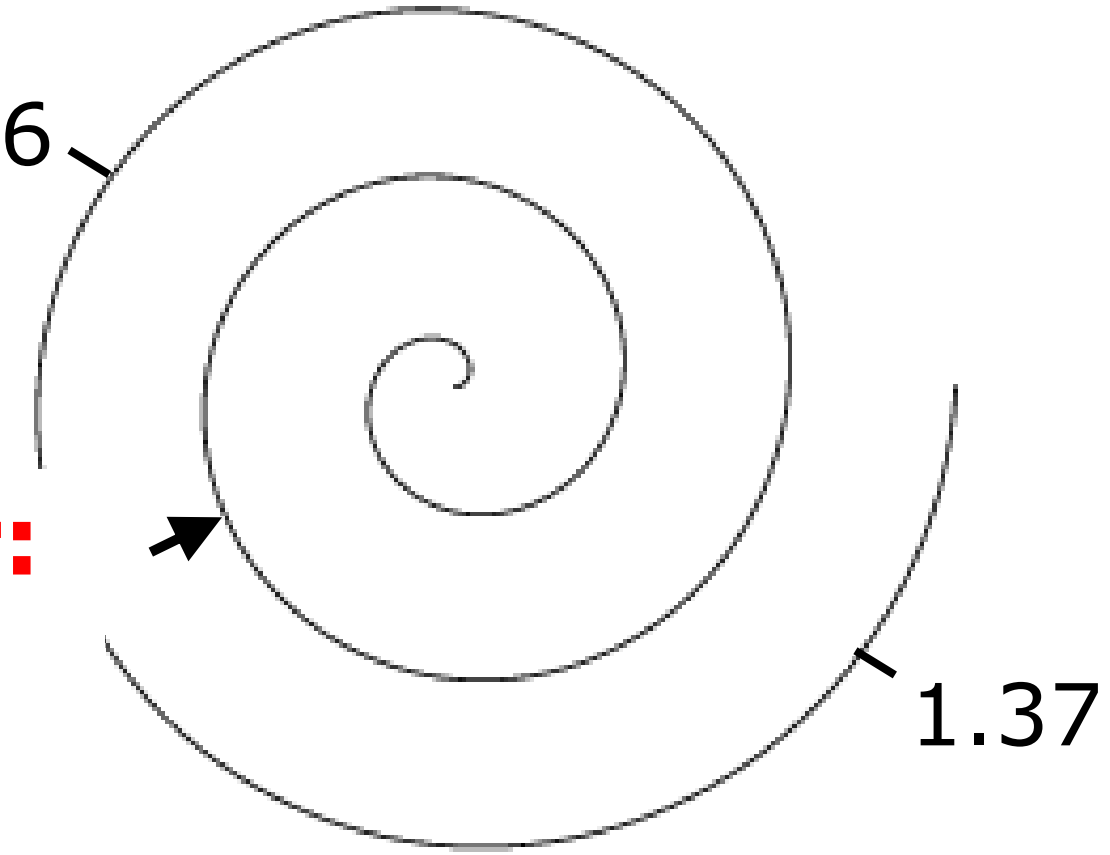
To the nearest multiple of 5, approximately, how many chilli peppers are there?

Answer: 195

(180 to 210 scores full marks)

Round 2 **Question 5**

What number is represented by the arrow on this number line?



Answer:
0.67

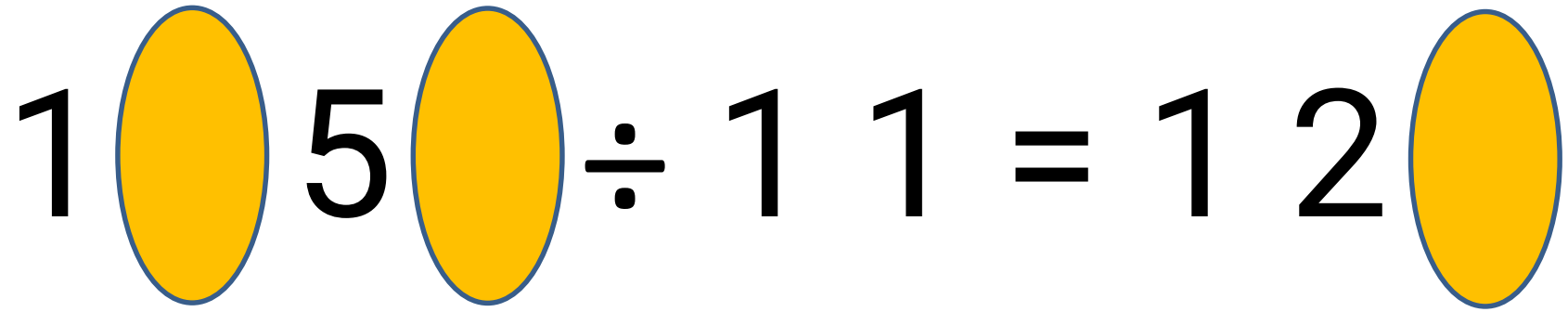
Round 3
ANSWERS

Herts for Learning

Round 3

Question 1

The hidden digits are all the same. What are they?



Round 3

Question 1

The hidden digits are all the same. What are they?

$$1\,\mathbf{3}\,5\,\mathbf{3} \div 1\,1 = 1\,2\,\mathbf{3}$$

Round 3 **Question 2**

Here are the first 5 numbers in a sequence:

24.8	22.45	20.1	17.75	15.4

If it were continued, what would be the 9th number?

Answer: 6

Round 3

Question 3

Which container has the **least** amount of juice left?

568 ml

A

284 ml

Half empty

425 ml

B

287 ml

138 ml sipped

340 ml

C

289 ml

15% spilt

Answer: A

Round 3

Question 4

What time did **train D** **arrive** in London?

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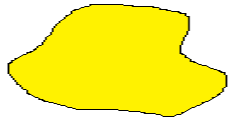
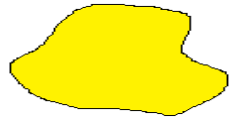
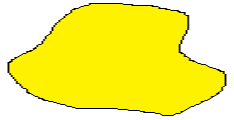
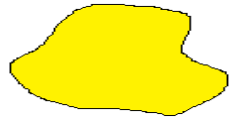
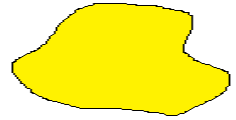
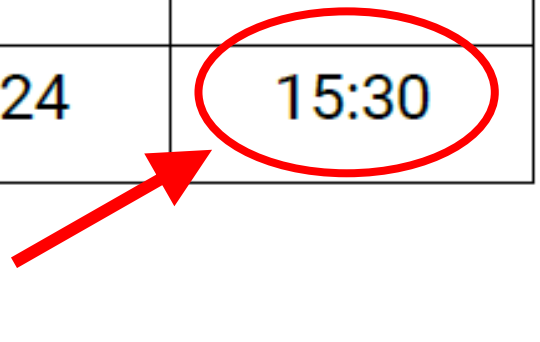
Birmingham	10:51		12:49	
Milton Keynes		12:19		14:43
London	12:26		14:24	

Round 3

Question 4

What time did **train D** **arrive** in London?

Station	*Train A*	*Train B*	*Train C*	*Train D*
Manchester	09:37	10:17	11:35	12.41
Birmingham	10:51	11:31	12:49	13:55
Milton Keynes	11:39	12:19	13:37	14:43
London	12:26	13:06	14:24	15:30



Round 3 **Question 5**

Order these calculations from **smallest to largest answer.**

a) $49.2 \div 6 =$ **8.2**

b) $15.3 - 2.75 - 4.25 =$ **8.3**

c) $3 \times 0.45 \times 6 =$ **8.1**

d) $4.62 + 2.9 + 0.83 =$ **8.35**

Answer: C A B D

Round 3 **Question 6**

Using the below digits only once, make this number sentence true.

3	4	5	6

$$\frac{4}{5} - \frac{3}{6} = \frac{3}{10}$$

Year 5 Mathematics Challenge

Herts for Learning