KEY STAGE 2
MATHEMATICS

SET A

PAPER 3 : REASONING

No Calculators   40 Minutes

First Name	
Last Name	

Total Marks	
	35

1. **Complete** the number sorting table below.

One has been done for you.

	Multiple of 4	Not a multiple of 4
Multiple of 6	24	
Not a multiple of 6		

/ 2

2. Below is a **magic square**. In a magic square, each row, column and diagonal **add** up to the **same** number.
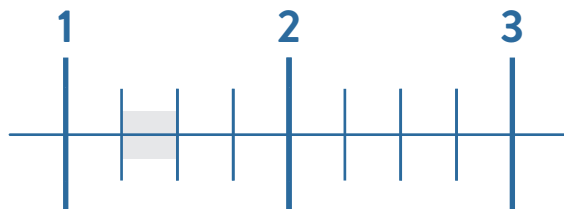
Calculate the two missing values and write them in the magic square.

	$\frac{1}{12}$	$\frac{1}{2}$
$\frac{1}{4}$	$\frac{5}{12}$	$\frac{7}{12}$
$\frac{1}{3}$		$\frac{1}{6}$

/ 2

3. Part of this number line is shaded.

Circle **all** of the numbers that belong within the shaded section of the number line.
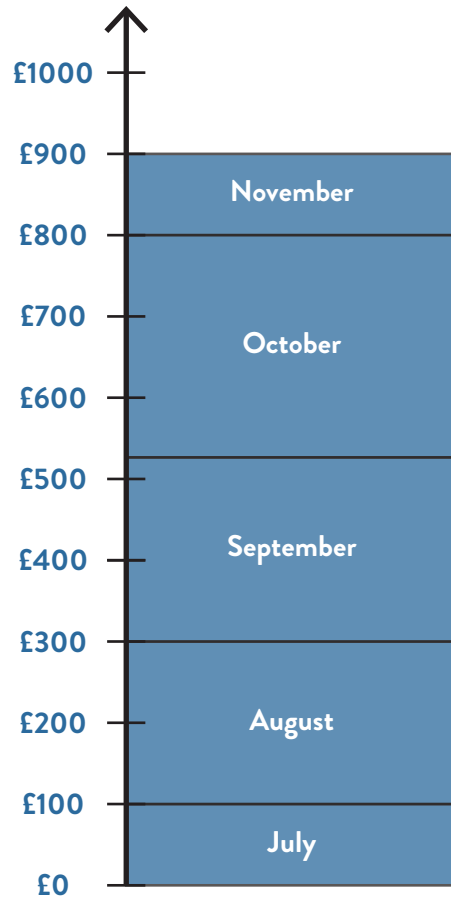
1.05   1.4 $1\frac{1}{3}$ $1\frac{1}{5}$

/ 1

4. A church group is aiming to collect £1,000 in the last six months of the year.

The chart below shows how much has been raised by the end of November.

In which **single** month was **more** than £250 collected?

🖊 [   ]   / 1

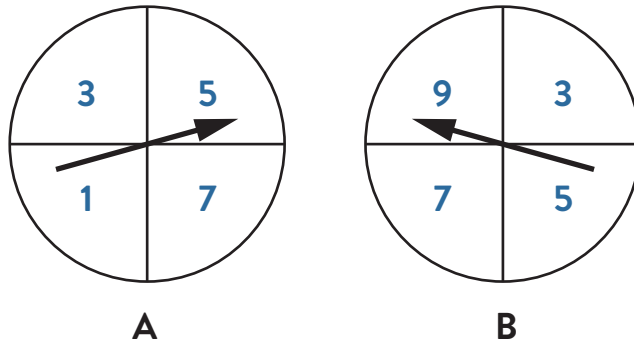How much money was collected in September, October and November **altogether**?

🖊 [£   ]   / 1

5.   Two number spinners are shown below:

A   B

Amy and Penny each spin a spinner and **add** their scores together.

Tick whether each statement below is certain, possible or impossible.

One has been done for you.

Marks

	Certain	Possible	Impossible
The total will be more than 15.		✔	
The total will be an even number.			
The number on B will be greater than the score on A.			
The total will be less than 4.			

/ 2

6.   Below are some cards with number operations on them:

| ÷ 10 | | ÷ 100 | | ÷ 1,000 |

| × 10 | | × 100 | | × 1,000 |

Choose **two** cards to complete the calculations below:

7.2 [   ] = 720

7.2 [   ] = 0.0072

/ 2

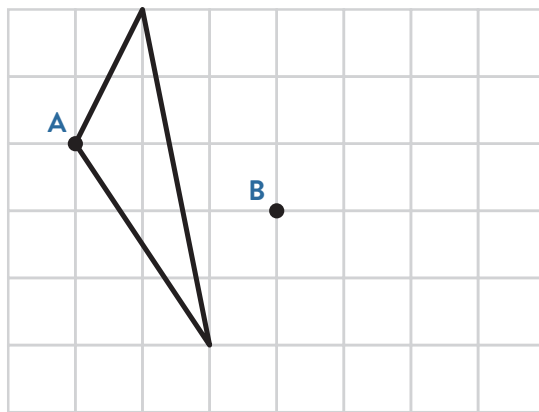**7.** Write the number 30,508 in **words**.

/1

8. The triangle on the grid below is **translated** so that point A moves to point B.
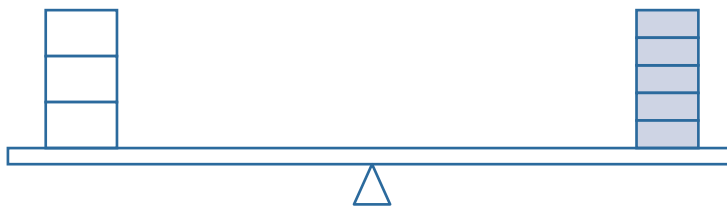
Draw the triangle in its new position.

Use a ruler

A

B

/1

9. **Three** white boxes perfectly balance **five** blue boxes.

If each white box weighs 13.5g, **how much** does each blue box weigh?

Show your working.

g

/2

Exam Ninja

10. **Four** bananas cost 84p.

Six apples cost £2.28.

How much **cheaper** is **one** banana than **one** apple?

Show your working.

£

/ 2

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11. Write the missing values in the sum below to make the subtraction correct.

$$
\begin{array}{cccc}
8 & \square & 3 & \square \\
- \square & 5 & \square & 8 \\
\hline
5 & 7 & 1 & 9 \\
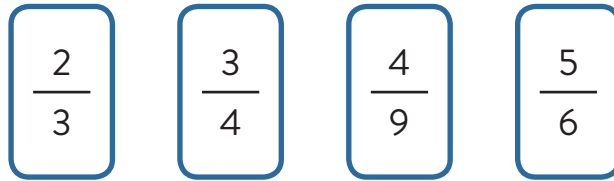\end{array}
$$

/ 2

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12. Two decimal numbers are **added** together. Their total is 1.
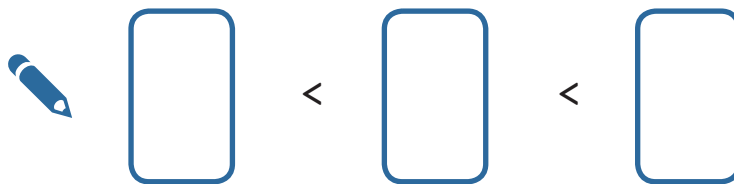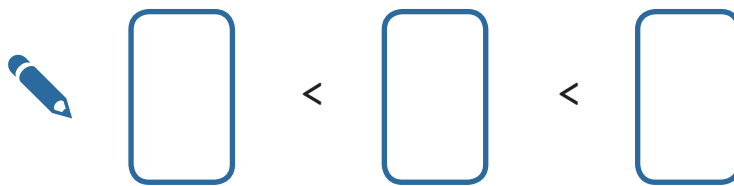
One of the numbers is 0.008.

What is the other number?

/ 1

13. Four cards with fractions on them are shown below:

$$\frac{2}{3} \quad \frac{3}{4} \quad \frac{4}{9} \quad \frac{5}{6}$$

Using **all** of the cards at least once, make two **different** expressions. You will need to use some cards twice.
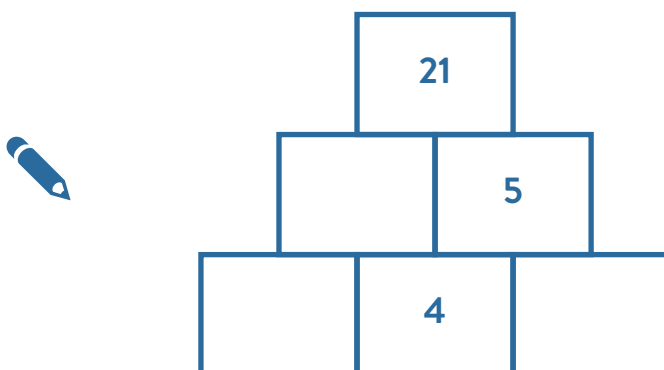
□ < □ < □

□ < □ < □

Marks

/ 2

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14. A number pyramid is shown below.

The number in each box is the **product** of the two numbers below it.

Complete the number pyramid.

```
      21
   [  ]  5
  [  ] 4 [  ]
```

/ 2

15. **Two** sides of a **quadrilateral** have been drawn below.

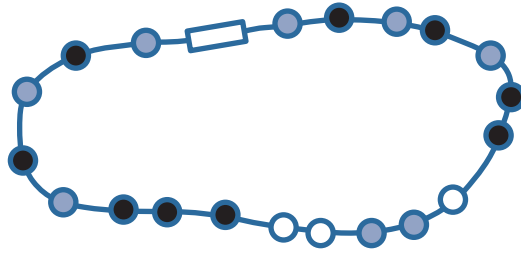**Complete** the quadrilateral so that it contains **three** acute angles.
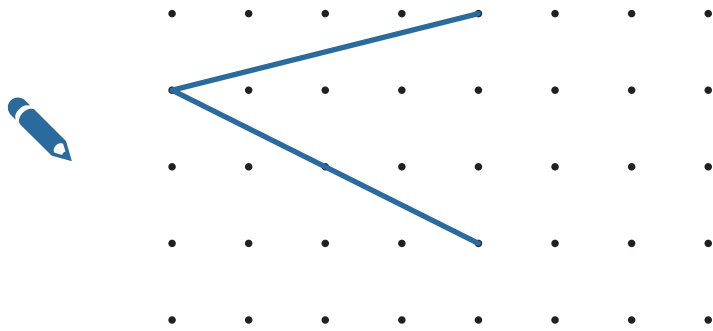
/ 1

16. Susan thinks of a number. She **subtracts** 3 and then **doubles** the result. She then **adds** 2. The final result is 6.5.

What was the **original** number that Susan thought about?

Show your working.

/ 2

17. A string of 20 round beads is shown below:

What **percentage** of the beads are blue?

✏️ [   ] %

Marks

/ 1

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18. Circle **all** the amounts of money that can be made with exactly **three** coins.

✏️ 60p   63p   64p   65p   72p   73p

/ 1

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19. Two whole numbers are each between 40 and 60.

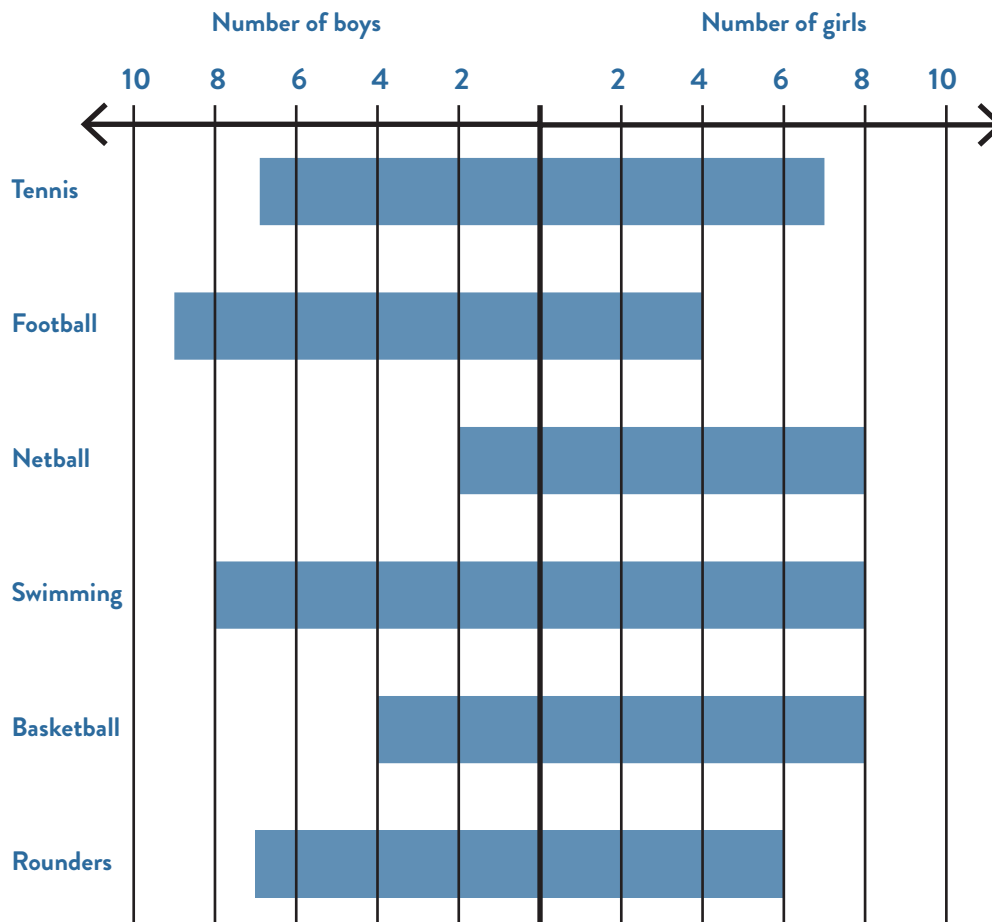The **product** of the two numbers is 2,378.

What are the two numbers?

✏️ [   ] and [   ]

/ 1

20. A number of children each chose their favourite sport. The results are shown below:

Number of boys   Number of girls

10   8   6   4   2   2   4   6   8   10

Tennis

Football

Netball

Swimming

Basketball

Rounders

Which sport was chosen by the most children?

🖊 [   ]   / 1

How many **more** boys than girls chose football?

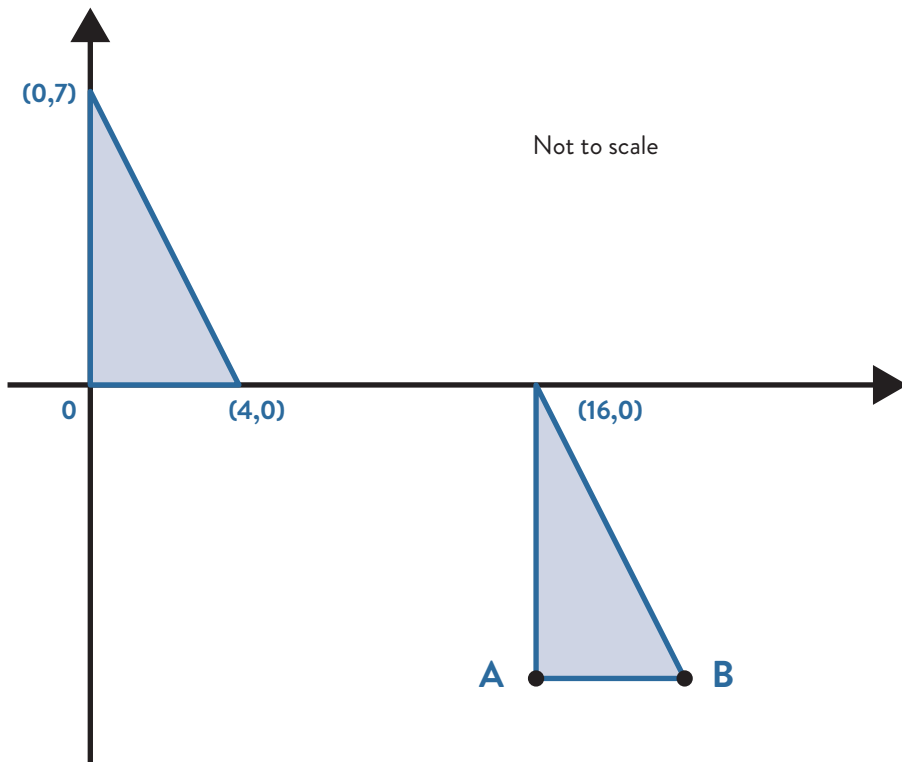🖊 [boys]   / 1

Which sports were liked by more girls than boys?

🖊 [   ]   / 1

21. Two **identical** triangles are shown on coordinate axes below:

Marks

Write the coordinates of points A and B.

A = (,) /1

B = (,) /1

END OF TEST

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