# Exam Ninja

## 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 | | |

Marks

/2

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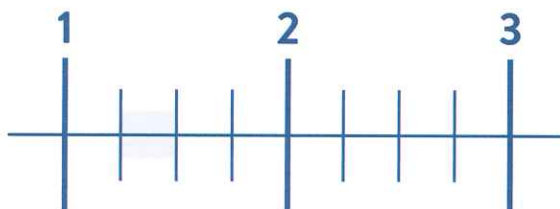
**Calculate** the two missing values and write them in the magic square.

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

/2

**3.** Part of this number line is shaded.

1        2        3

Circle **all** of the numbers that belong within the shaded section of the number line.

1.05          1.4          $1\frac{1}{3}$          $1\frac{1}{5}$
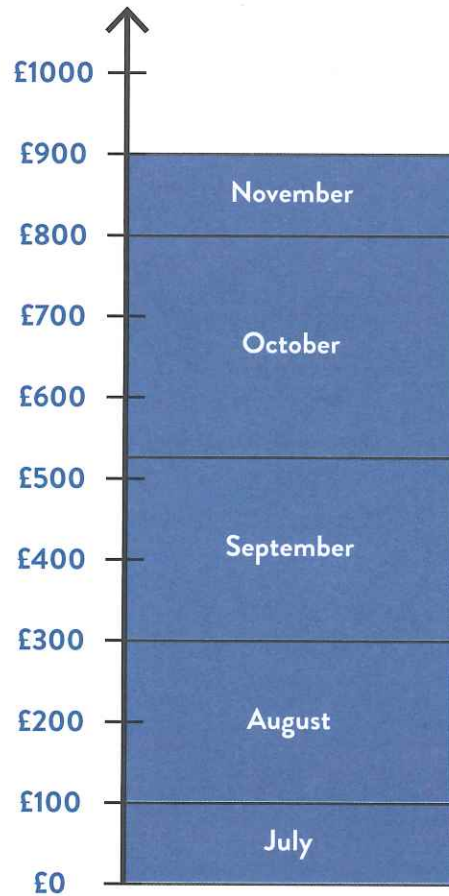
/1

**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.

| £1000 | |
| £900 | November |
| £800 | |
| £700 | October |
| £600 | |
| £500 | |
| £400 | September |
| £300 | |
| £200 | August |
| £100 | |
| £0 | July |

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

/1

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

£

/1

**5.** The numbers in the sequence below **decrease** by 17 each time.

**Complete** the sequence.

| | 25 | 8 | | -26 | | -60 |

Marks

/ 2

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**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

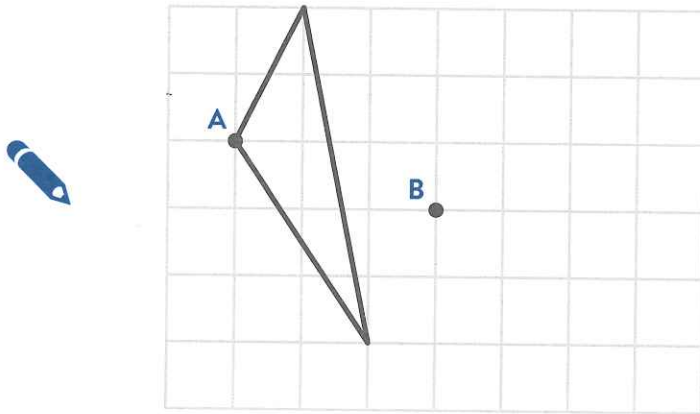7.2 [ ] = 0.0072

/ 2

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

[ ]

/ 1

**Marks**

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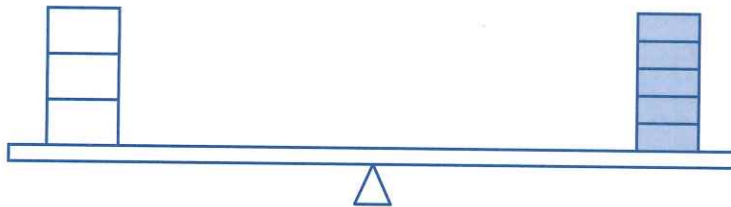
**Draw** the triangle in its new position.

Use a ruler

/ 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

**Marks**

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

**Six** apples cost £2.28.

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

Show your working.

£ _____

/ 2

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

$$8\ \square\ 3\ \square$$
$$-\ \square\ 5\ \square\ 8$$
$$\overline{5\ 7\ 1\ 9}$$

/ 2

**12.** Two decimal numbers are **added** together. Their total is 1.

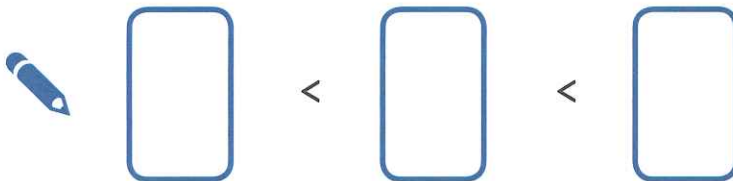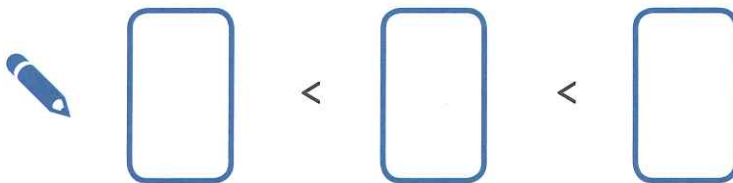**One** of the numbers is 0.008.

What is the other number?

_____

/ 1

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

$$\frac{2}{3} \qquad \frac{3}{4} \qquad \frac{4}{9} \qquad \frac{5}{6}$$
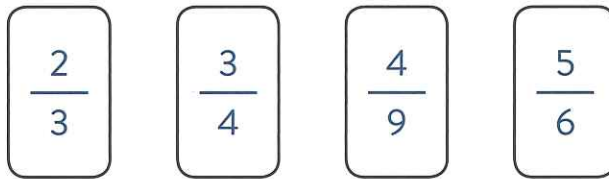
Using **all** of the cards at least once, make two **different** expressions. You will need to use some cards twice.

| | | |
|---|---|---|
| ☐ | < ☐ | < ☐ |

| | | |
|---|---|---|
| ☐ | < ☐ | < ☐ |

/ 2

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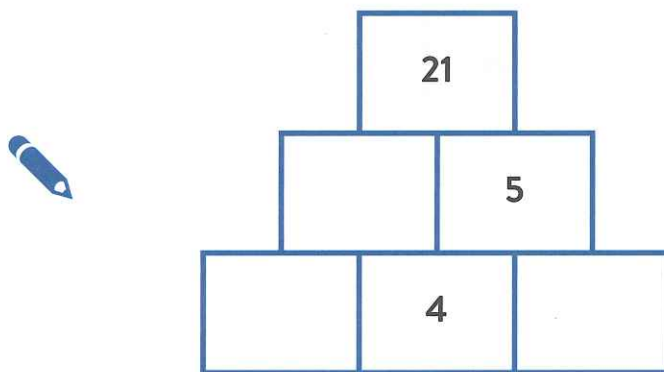**14.** A number pyramid is shown below.

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

**Complete** the number pyramid.

```
        ┌──────┐
        │  21  │
     ┌──┴──┬───┴──┐
     │     │  5   │
  ┌──┴──┬──┴───┬──┘
  │  4  │      │
  └─────┴──────┘
```
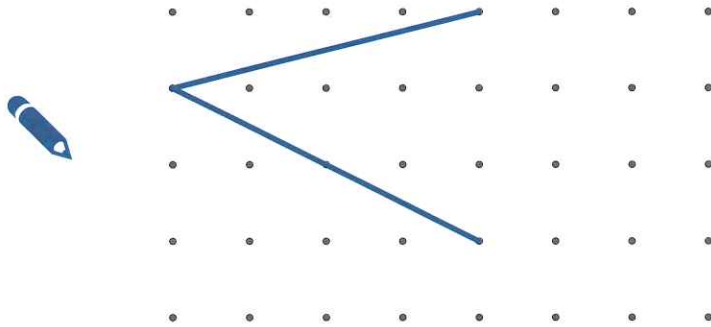
/ 2

**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.

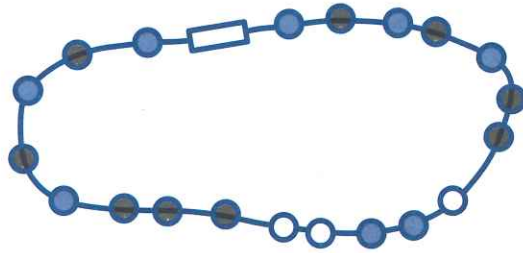What was the **original** number that Susan thought about?

Show your working.

/2

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



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

✏️ [_____] %

/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

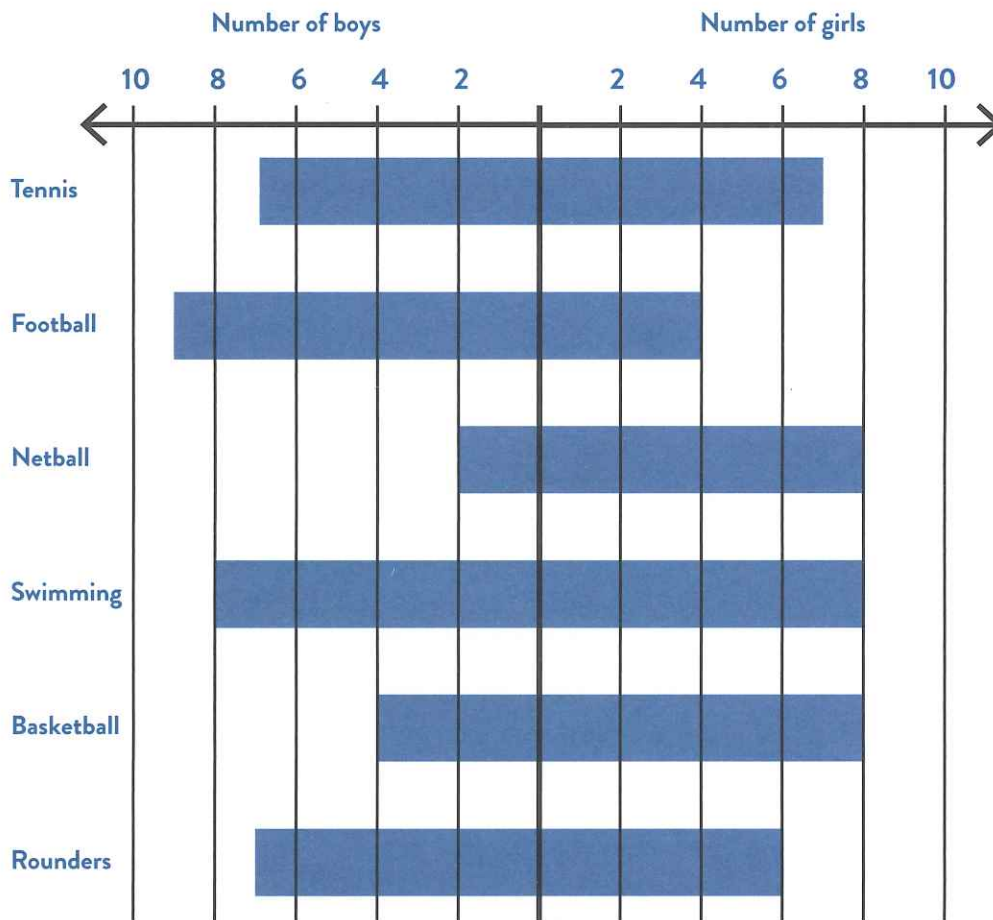---

**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?

**Marks**

/1

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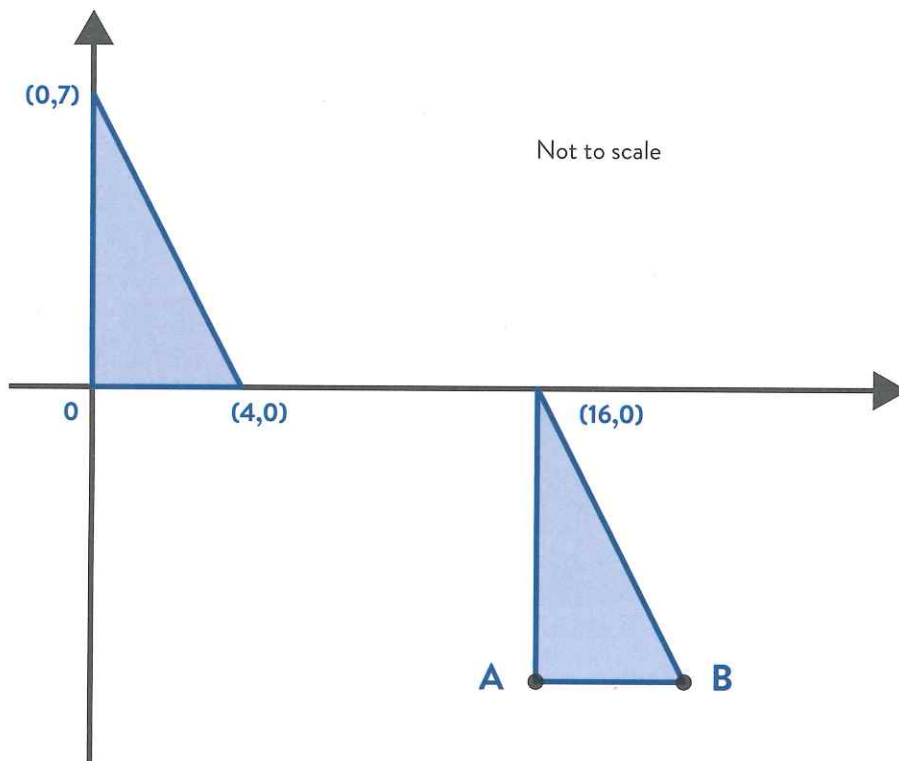
boys

/1

Which sports were liked by more girls than boys?

/1

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

Marks



(0,7)

Not to scale

0    (4,0)    (16,0)

A          B

Write the coordinates of points A and B.

A = (        ,        )    /1

B = (        ,        )    /1

END OF TEST