Solve problems with division

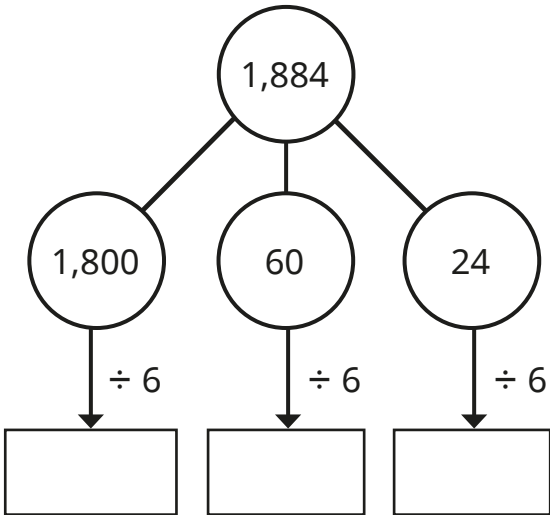**White Rose MATHS**

1 Use the part-whole models to help work out the divisions.

a) 450 ÷ 3 = ▢

```
        450
       /    \
     300    150
      |      |
     ÷ 3    ÷ 3
      ↓      ↓
    [   ]  [   ]
```

c) 1,884 ÷ 6 = ▢

```
          1,884
        /   |    \
    1,800   60    24
      |     |     |
     ÷ 6   ÷ 6   ÷ 6
      ↓     ↓     ↓
    [   ] [   ] [   ]
```

b) 2,639 ÷ 13 = ▢

```
        2,639
       /     \
    2,600     39
      |       |
    ÷ 13    ÷ 13
      ↓       ↓
    [   ]   [   ]
```
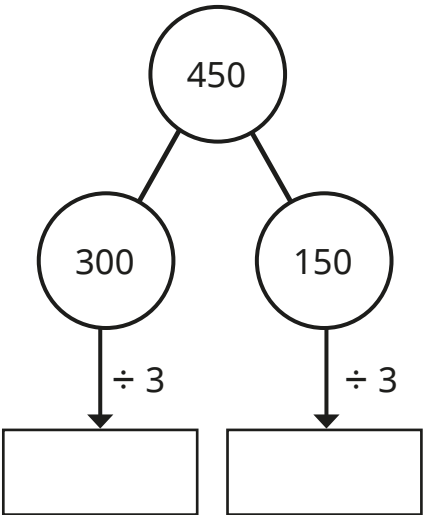
d) 32,672 ÷ 32 = ▢
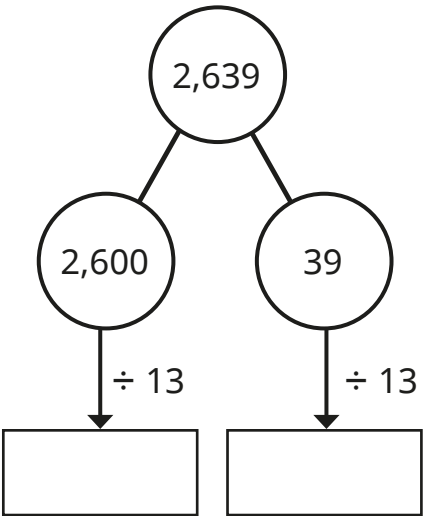
```
           32,672
         /    |    \
    32,000   640   ( )
      |       |     |
    ÷ 32    ÷ 32  ÷ 32
      ↓       ↓     ↓
    [   ]   [   ] [   ]
```
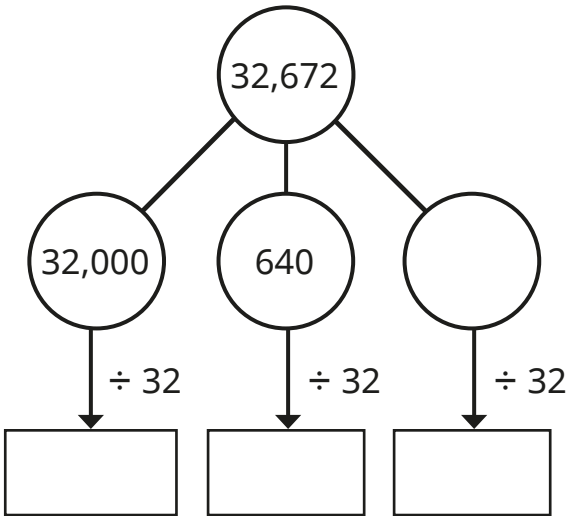
2 Complete the function machines.

input → 360 → [÷ 12] → [ ] → output

input → 360 → [÷ 6] → [ ] → [÷ 2] → [ ] → output

input → 360 → [÷ 3] → [ ] → [÷ 4] → [ ] → output

input → 360 → [÷ 10] → [ ] → [÷ 2] → [ ] → output
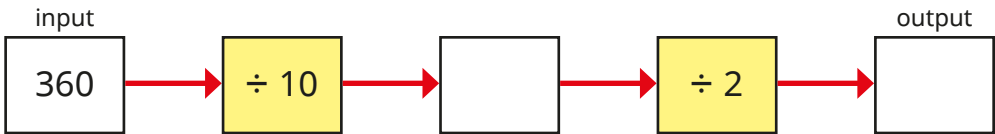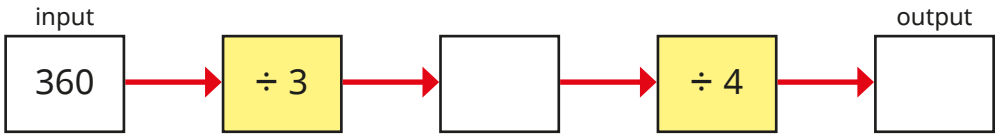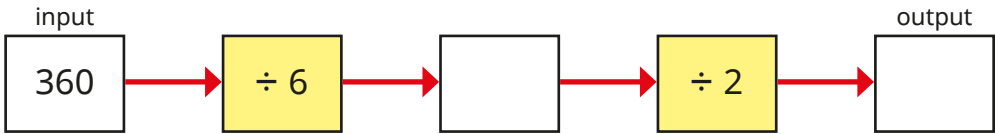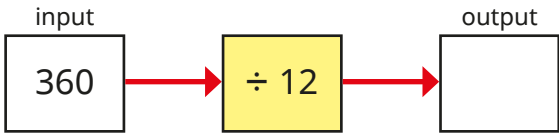
What do you notice?

3 Sort the divisions into the table.

| 984 ÷ 4 | 2,815 ÷ 4 | 68,000 ÷ 21 |

| 6,493 ÷ 6 | 68,000 ÷ 20 | 21,000,000 ÷ 7 |

| Solve with mental strategy	Solve with written method

Compare answers with a partner.

Work out the answer to each division using your chosen method.

4 Eggs are packed in boxes of either 8 or 12

There are 960 eggs.

All the eggs need to be packed into the same size boxes.

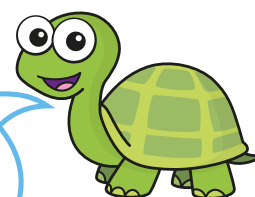How many of each type of box are needed?

☐ boxes of 8

☐ boxes of 12

5 A coach can seat 24 people.

768 supporters are travelling to a rugby match by coach.

How many coaches are needed to transport all the supporters?

☐

6
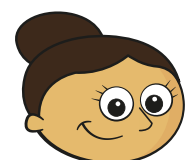
Dora: To divide by 8, I can divide by 2, divide by 2 again and divide by 2 again.

Tiny: To divide by 6, I can divide by 2, divide by 2 again and divide by 2 again.
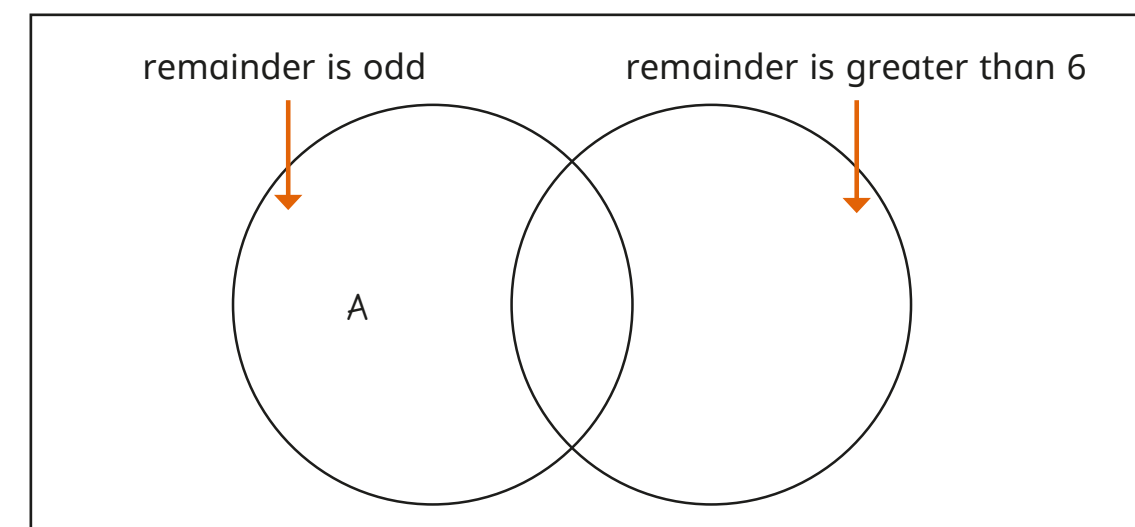
Who do you agree with? _____

Explain your reasons to a partner.

7 Label the sorting diagram with the divisions.

The first one has been done for you.

A 901 ÷ 16   **C** 910 ÷ 16   **E** 901 ÷ 17   **G** 910 ÷ 17

B 902 ÷ 16   **D** 920 ÷ 16   **F** 902 ÷ 17   **H** 920 ÷ 17

remainder is odd   remainder is greater than 6

A

8

| 1 | 2 | 3 | 4 | 5 |

Use each digit card once to complete the division in different ways.

☐☐☐ ÷ ☐☐

Experiment to find divisions that give:

a) the smallest possible remainder

b) the greatest possible remainder

c) a remainder that is a multiple of 5

Compare answers with a partner.