Name _____

# Arcade
# of
# Problems #1

Cad is a secret number.
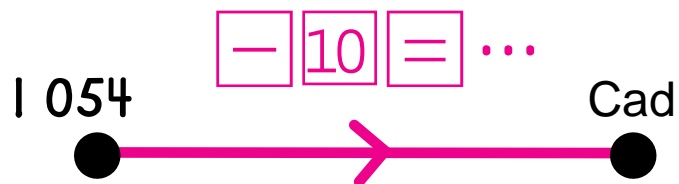
Cad is one of these numbers.

$$- \boxed{10} = \cdots$$

1 054 ⟶ Cad

Who is Cad? _____

Put each of these numbers in the string picture.

15    20    28    40    51

Less than 30

Multiples of 5
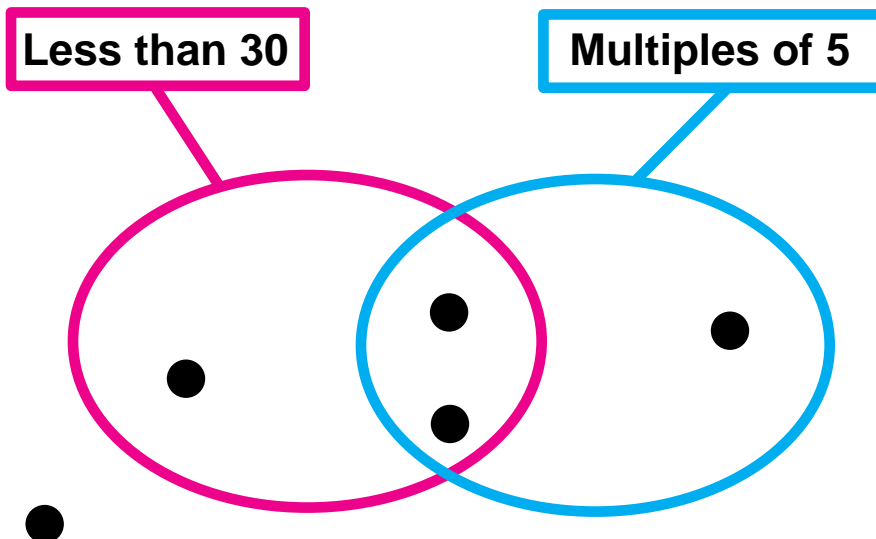
Put each of these numbers in the string picture.

3    4    5    6    10

Positive divisors of 20

Odd numbers
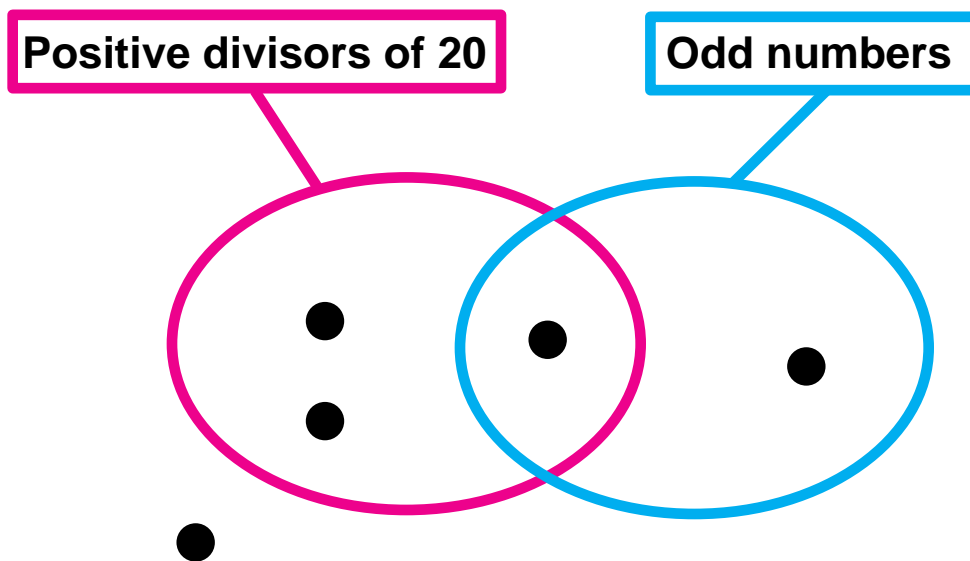
Label the dots.
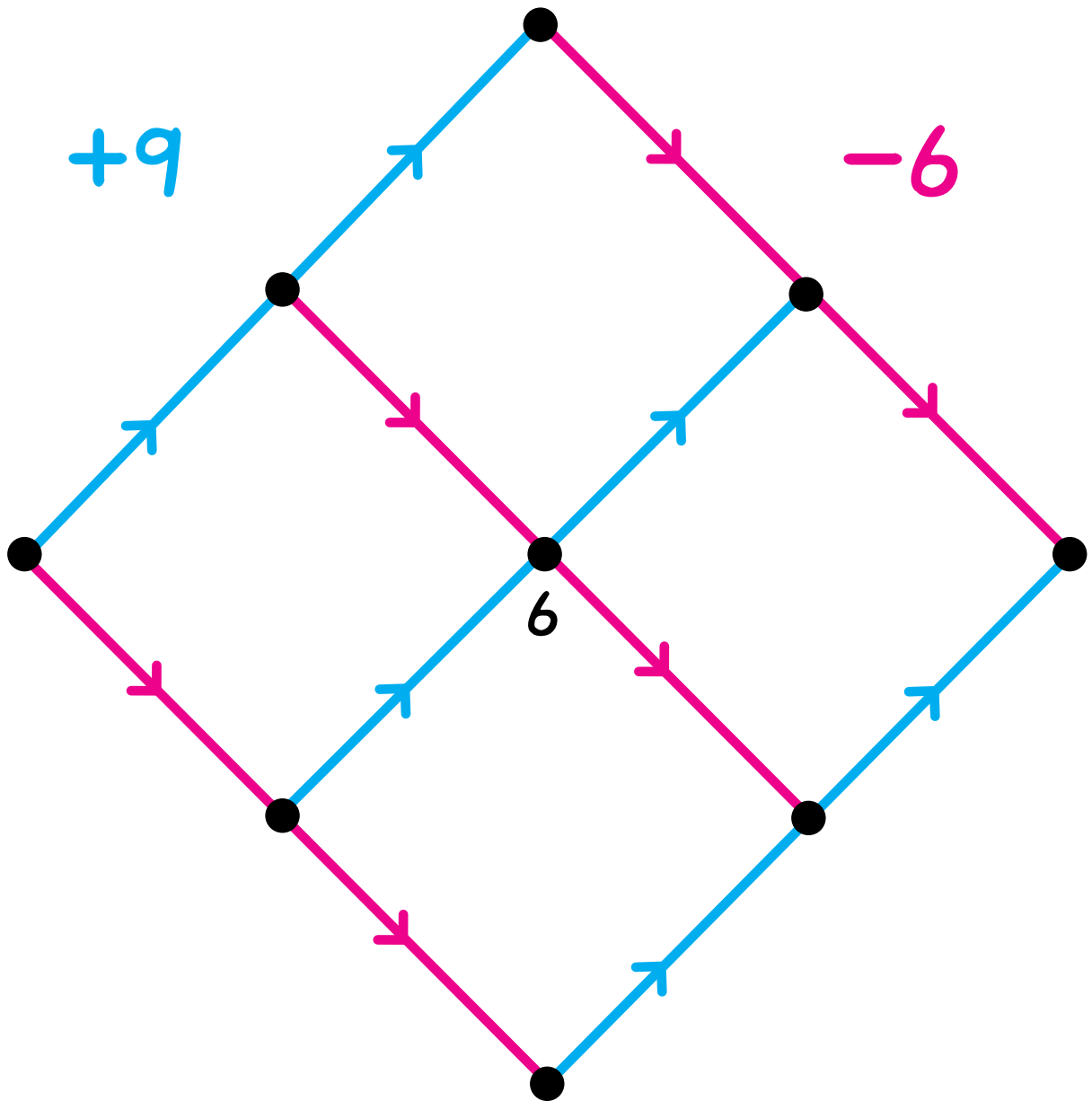


The least even number in this picture is _____.

The greatest multiple of 4 in this picture is _____.

Put a one-digit number in each box to make the calculations correct.

$$
\begin{array}{r}
\square\,7\,2\,3\,\square \\
+\ 9\ \square\ \square\ 7 \\
\hline
6\ \square\ 3\ 0\ 5
\end{array}
$$

$$
\begin{array}{r}
8\ \square\ 9 \\
-\ 6\ 5\ \square \\
\hline
\square\ 3\ 3
\end{array}
$$

Add.

$$
\begin{array}{r}
8\,6\,7 \\
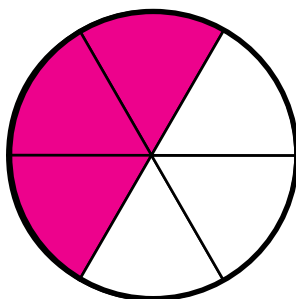4\,6 \\
+\ 5\,4\,3\,7 \\
\hline
\end{array}
$$

Subtract.

$$
\begin{array}{r}
1\,4\,0\,5\,3 \\
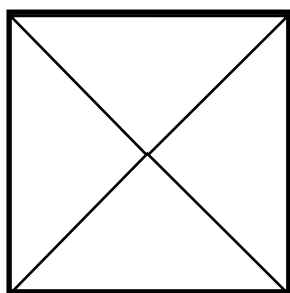-\ 7\,2\,4\,8 \\
\hline
\end{array}
$$

Color one-half of each shape red.

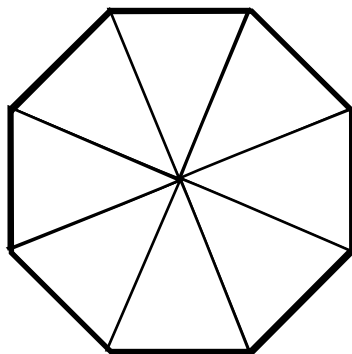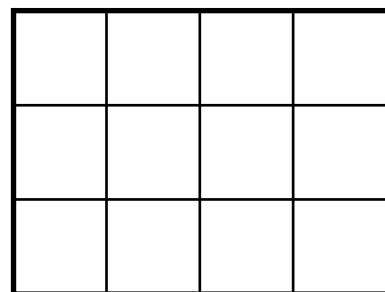Write another name for $\frac{1}{2}$ as suggested by the picture.
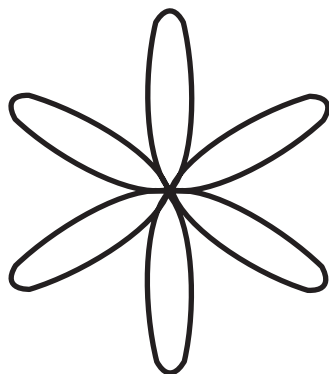
Example:

$$\frac{1}{2} = \frac{3}{6}$$

---

$$\frac{1}{2} = \frac{}{}$$

$$\frac{1}{2} = \frac{}{}$$

$$\frac{1}{2} = \frac{}{}$$

---

$$\frac{1}{2} = \frac{}{}$$
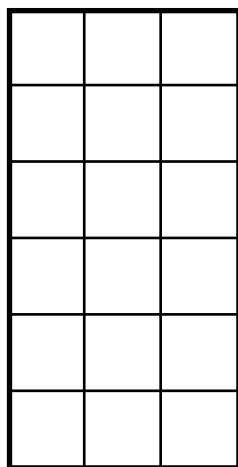
$$\frac{1}{2} = \frac{}{}$$
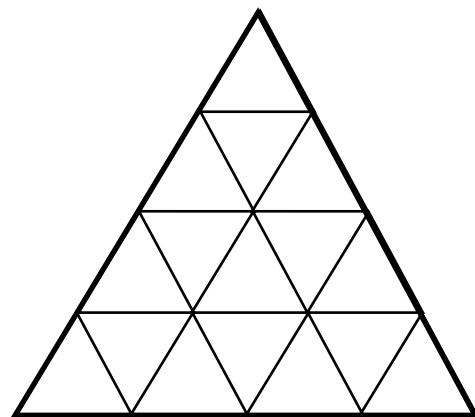
$$\frac{1}{2} = \frac{}{}$$

Fill in the boxes for the arrows and label the dots.



$+\boxed{\phantom{0}}$

$+\boxed{\phantom{0}}$

24

10

32

7
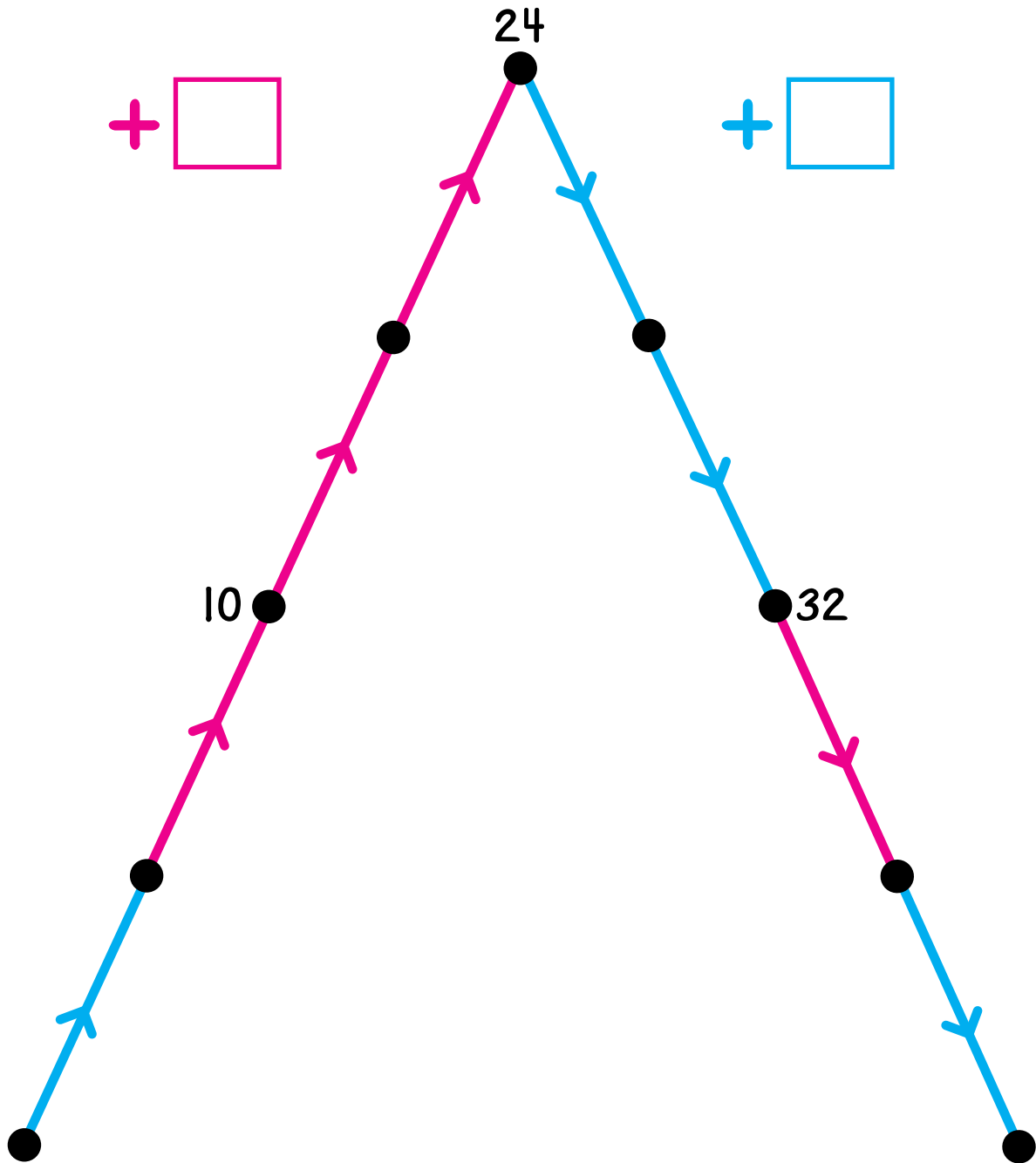
Put each number on the Minicomputer using exactly one of these checkers.

②    ③    ④    ⑤    ⑥    ⑦    ⑧    ⑨

☐☐ = 28

☐☐ ☐☐ = 160

☐☐ = 72

☐☐ ☐☐ = 100

☐☐ = 40

☐☐ ☐☐ = 240

☐☐ ☐☐ ☐☐ = 1200

8

Write a fraction to indicate what part of the shape is colored blue. One is done for you.
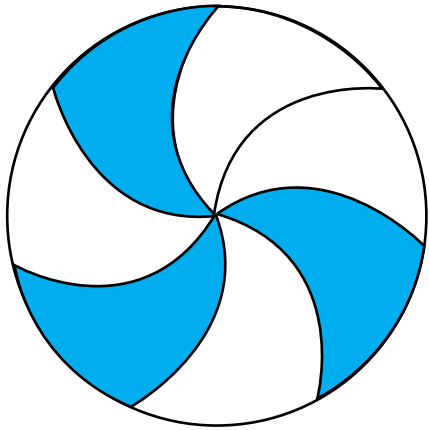
$$\frac{3}{7}$$

_____          _____

_____          _____

_____          _____
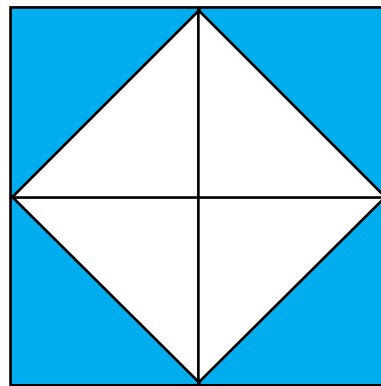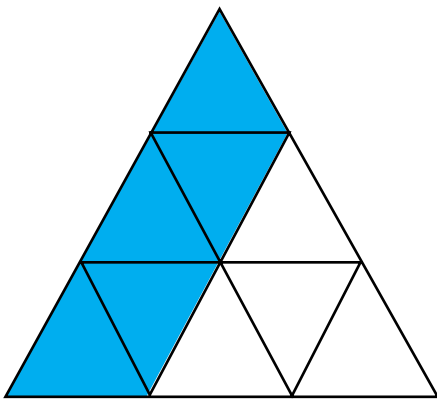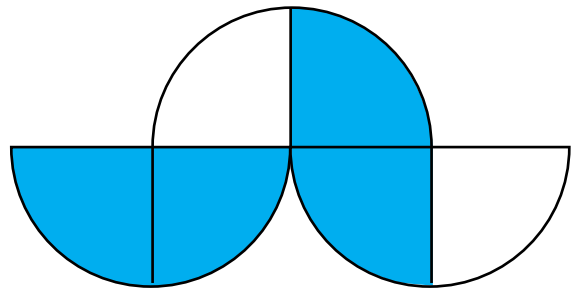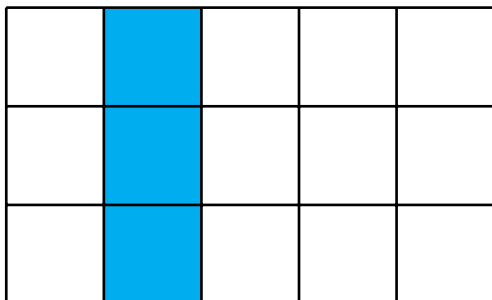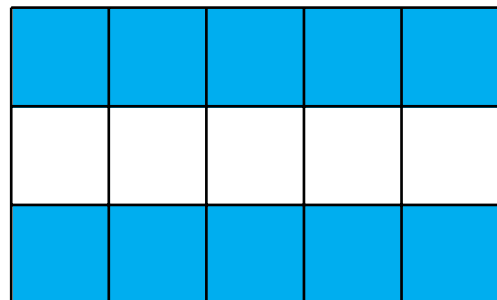
Draw an arrow road from 2.8 to 8.6 using +2.0 and +0.6 arrows.

2.8
●

+2.0
+0.6

●
8.6

Fill in the box for each arrow.
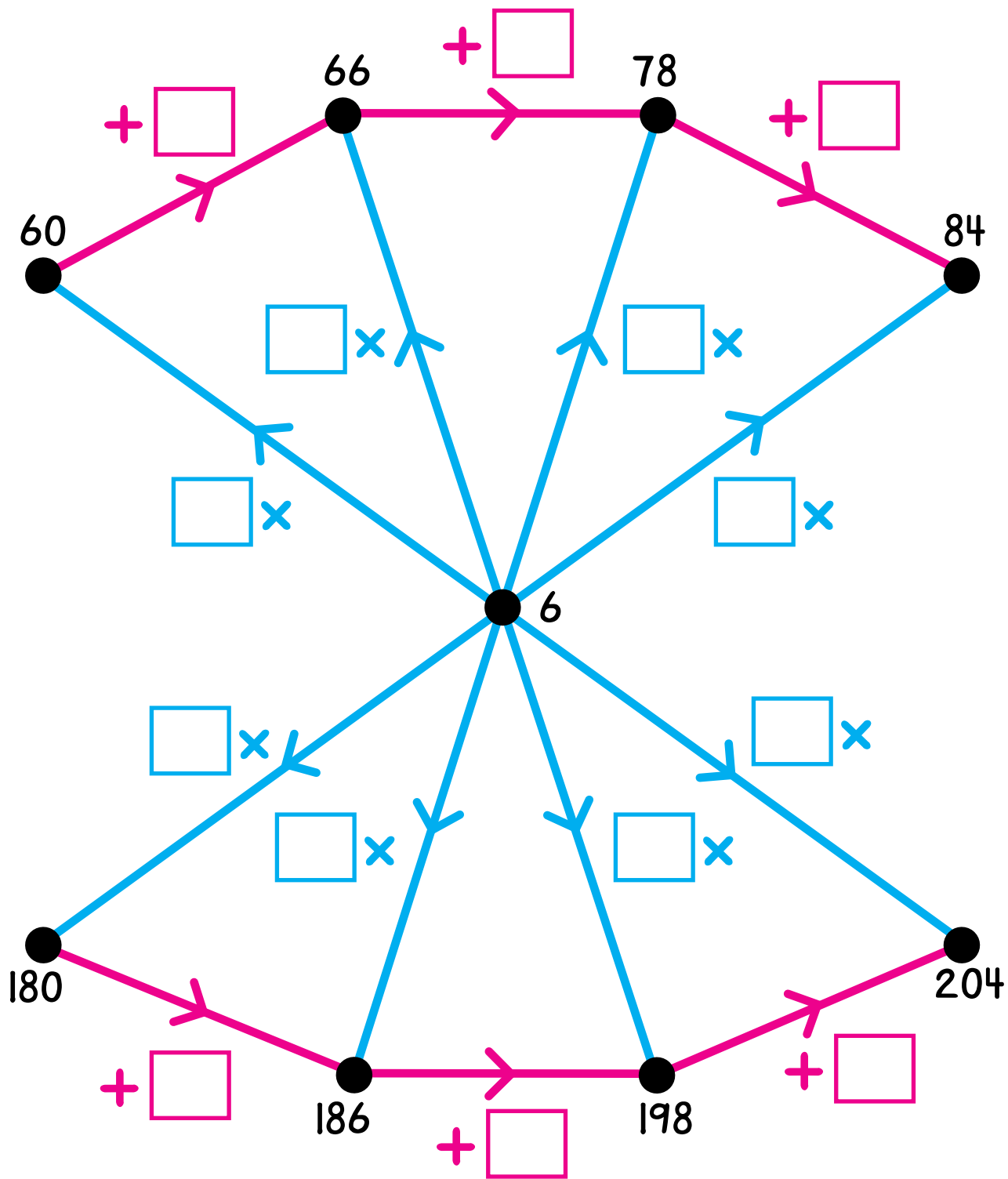
The red label is one of these:

| |
|---|
| **Greater than 10** |
| **Even numbers** |
| **Multiples of 3** |
| **Multiples of 4** |
| **Positive divisors of 20** |
| **Positive divisors of 24** |

The blue label is one of these:

| |
|---|
| **Greater than 5** |
| **Even numbers** |
| **Multiples of 3** |
| **Multiples of 5** |
| **Positive divisors of 16** |
| **Positive divisors of 20** |

Label the strings.

2
●

10
●
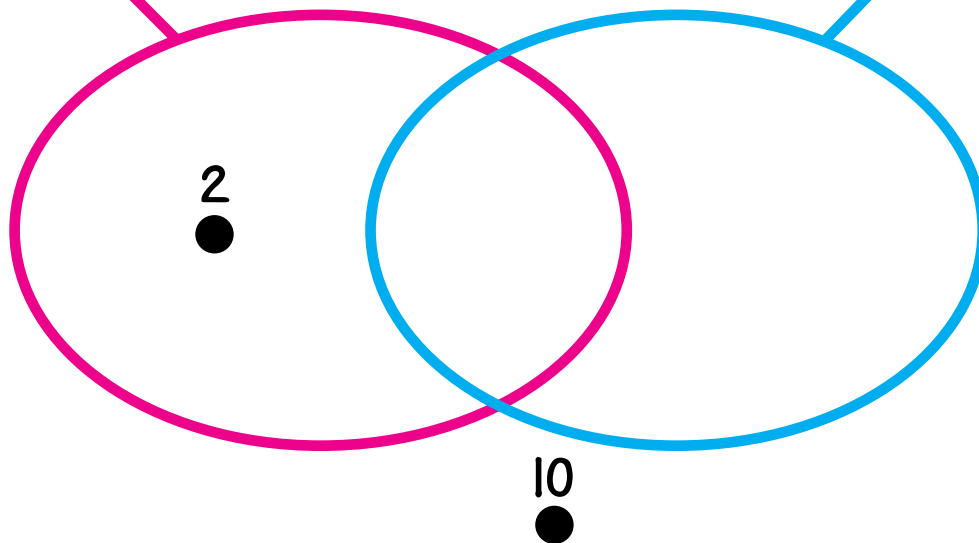
Label the dots. Many solutions are possible.

is less than



47

0        0.5

Î

4        6
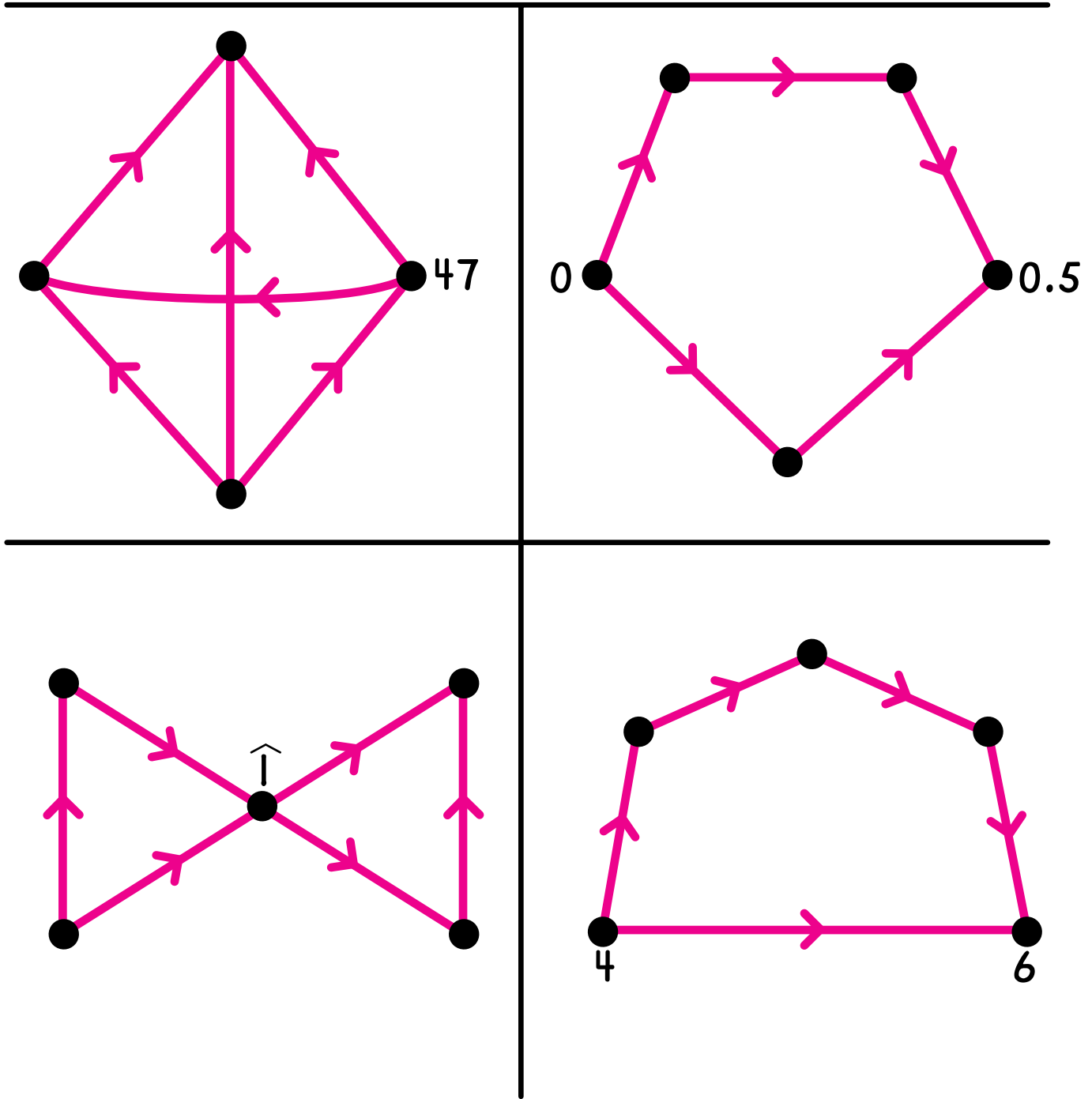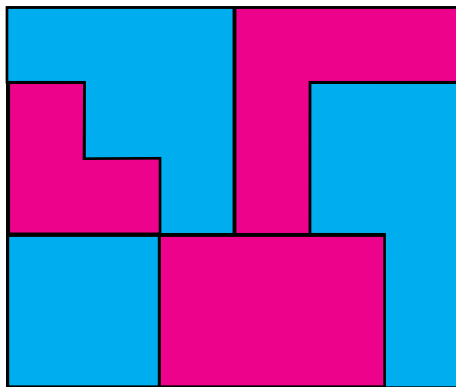
How many squares of this size ▮ fit into the red region?

_____

How many squares of this size ▮ fit into the blue region?

_____
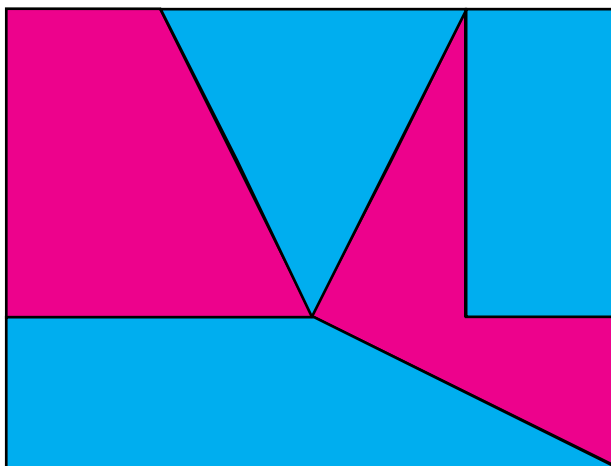


How many triangles of this size ◢ fit into the red region?

_____

How many triangles of this size ◢ fit into the blue region?

_____

Rom is a secret number.

Rom is in this arrow picture.

**Multiples of 3**   **Multiples of 4**

Rom

**Square numbers**
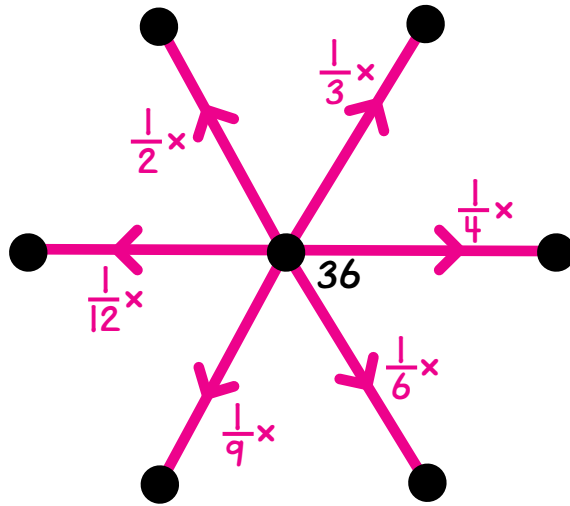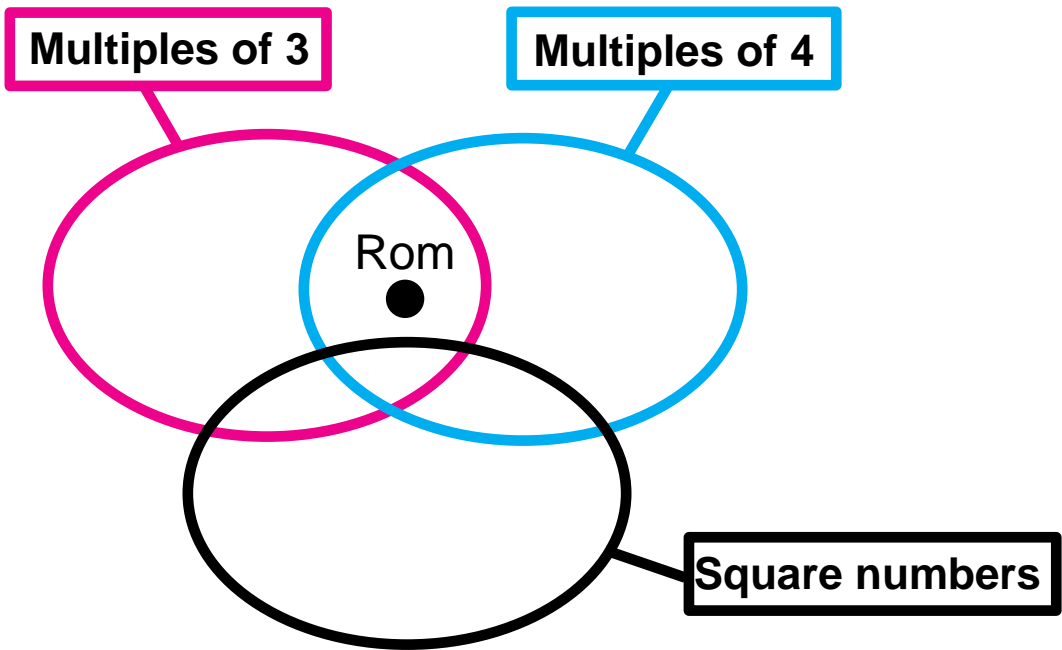
Who is Rom? _____

Fill in the box for each arrow.



2.1
2.6
2.7
2.5
4
1.8
1.9
1.7
1.2

$+ \square$
$- \square$
$- \square$
$+ \square$
$+ \square$
$+ \square$
$+ \square$
$- \square$
$- \square$
$- \square$
$- \square$
$- \square$
$+ \square$
$- \square$
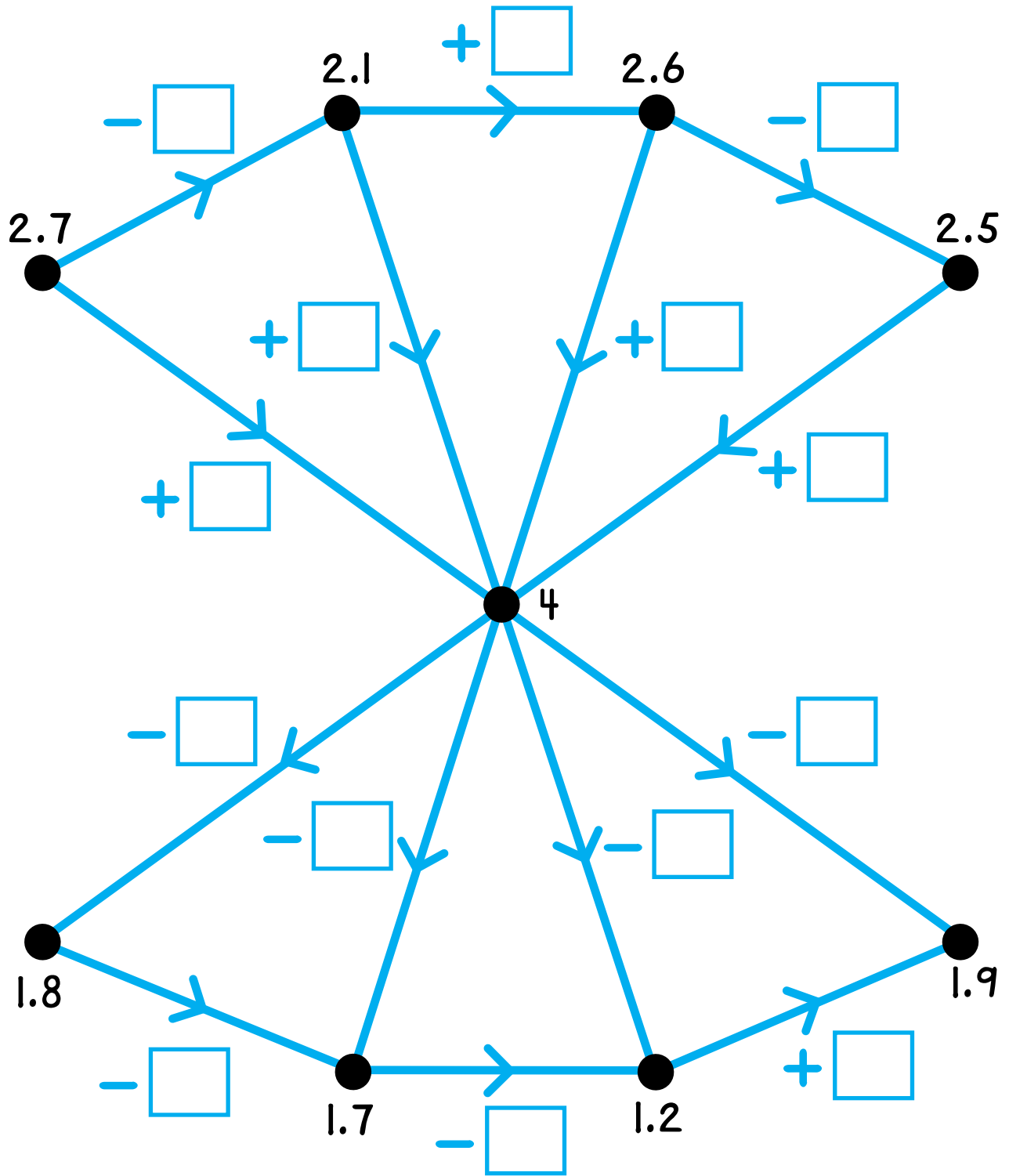
# Nabu's Packing Jobs

Nabu receives 79 boxes of Superspace electronic games and each box holds 16 games.

How many games does Nabu receive altogether? _____ games
In the space below, record any calculations that you do to find the answer.




Nabu's employer wants the games put into smaller boxes that hold only 9 games each, a more popular order size.

How many of the smaller size boxes will Nabu be able to fill? _____ boxes

How many games will be left over? _____ games
In the space below, record any calculations that you do to find the answer.
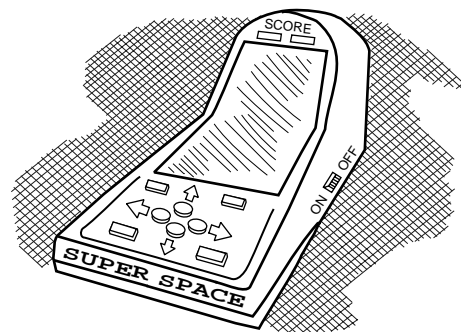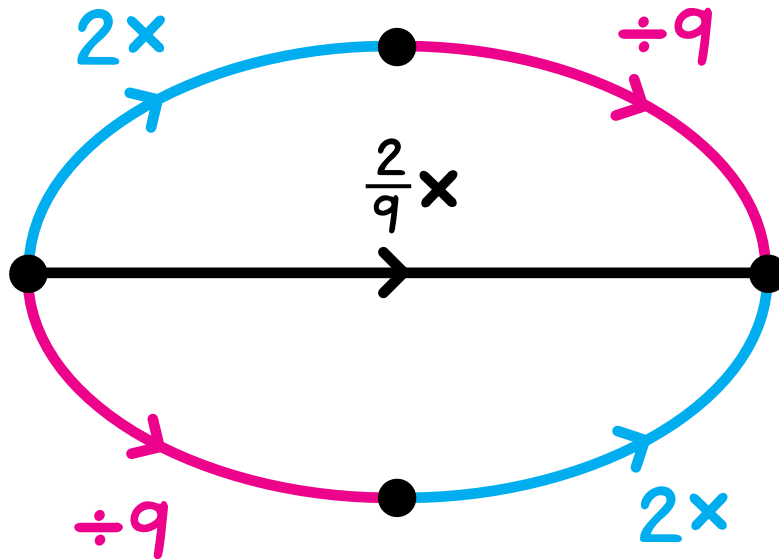
Use the arrow picture above to help you do these calculations.

$\frac{2}{9} \times 18 = \boxed{\phantom{00}}$

$\frac{2}{9} \times 36 = \boxed{\phantom{00}}$

$\frac{2}{9} \times 90 = \boxed{\phantom{00}}$

$\frac{2}{9} \times 360 = \boxed{\phantom{00}}$

$\frac{2}{9} \times 54 = \boxed{\phantom{00}}$

$\frac{2}{9} \times \boxed{\phantom{00}} = 6$

The boxes shown below are made from small cubes like these.
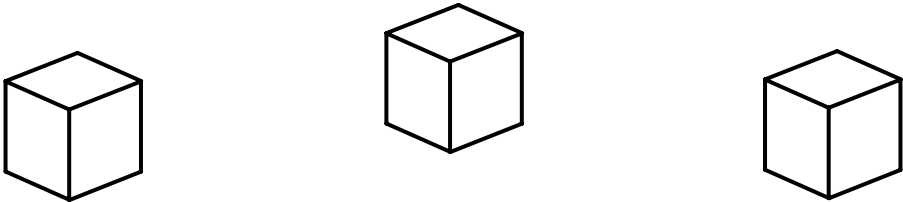
How many small cubes does it take to make each box?

_____ cubes

_____ cubes

_____ cubes

Pair the tags.

1.8 ●━━━━━➤●━━━━━➤● 5
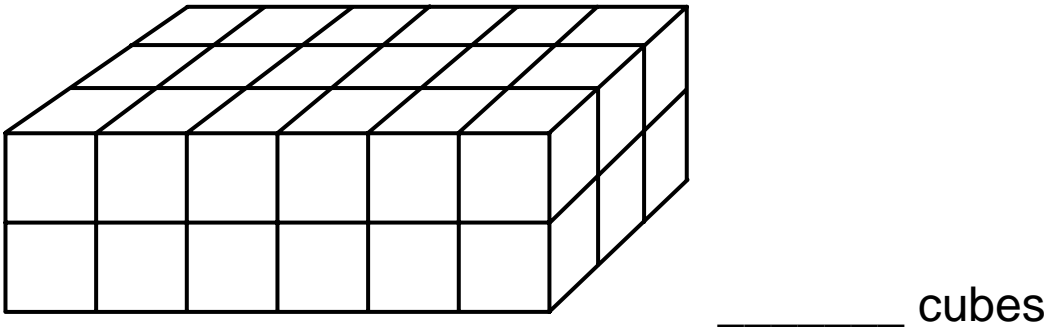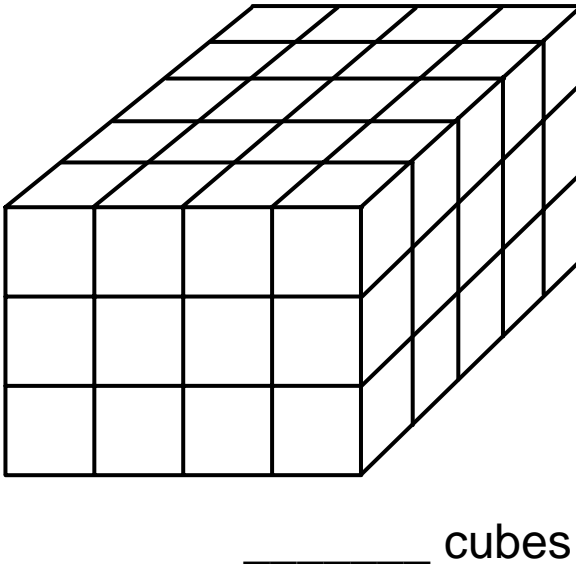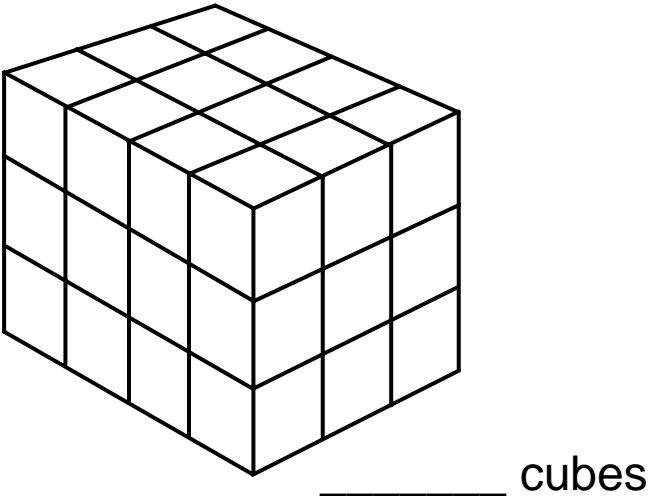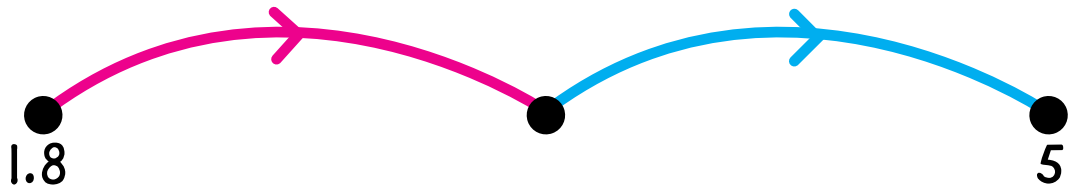
| | |
|---|---|
| −0.8 | +4.55 |
| +1.6 | 2× |
| $\frac{1}{3}$× | +1.6 |
| +8.2 | 5× |
| ÷4 | +4.4 |
| +0.7 | ÷2 |

Val is a secret number.

Clue 1

Val is the ending number of a road starting at 2.1 and using exactly one red arrow and two blue arrows.

$2\times$  $+0.7$

2.1 ●

Val could be _____, _____, or _____.

Clue 2

Val is one of these dots. Label the dots.

5.9

5.4
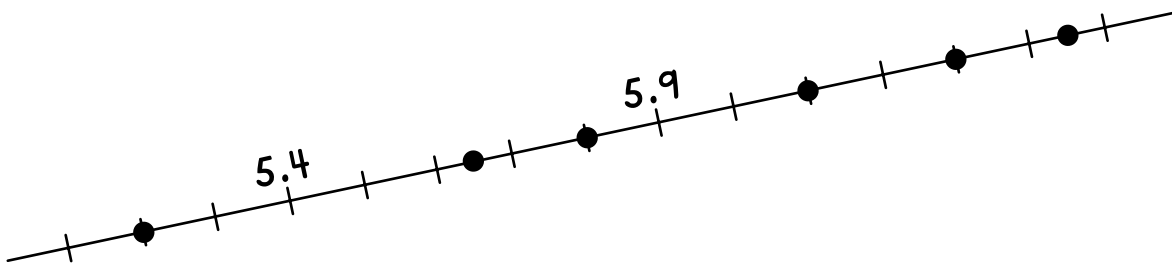
Who is Val? _____

Put each number on the display of a calculator using only these keys:

$$\boxed{4}\quad\boxed{6}\quad\boxed{+}\quad\boxed{-}\quad\boxed{\times}\quad\boxed{\div}\quad\boxed{=}$$
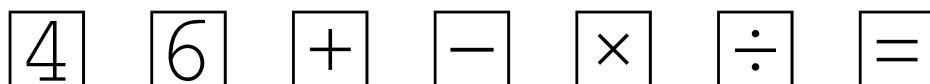
Write the keys in the order you use them. You may use a key more than once.

_____ 28

_____ 100

_____ 1

_____ 5

Fill in the boxes for the arrows and label the dots.



7.6

+ ☐

I0

I3.8

+ ☐

23
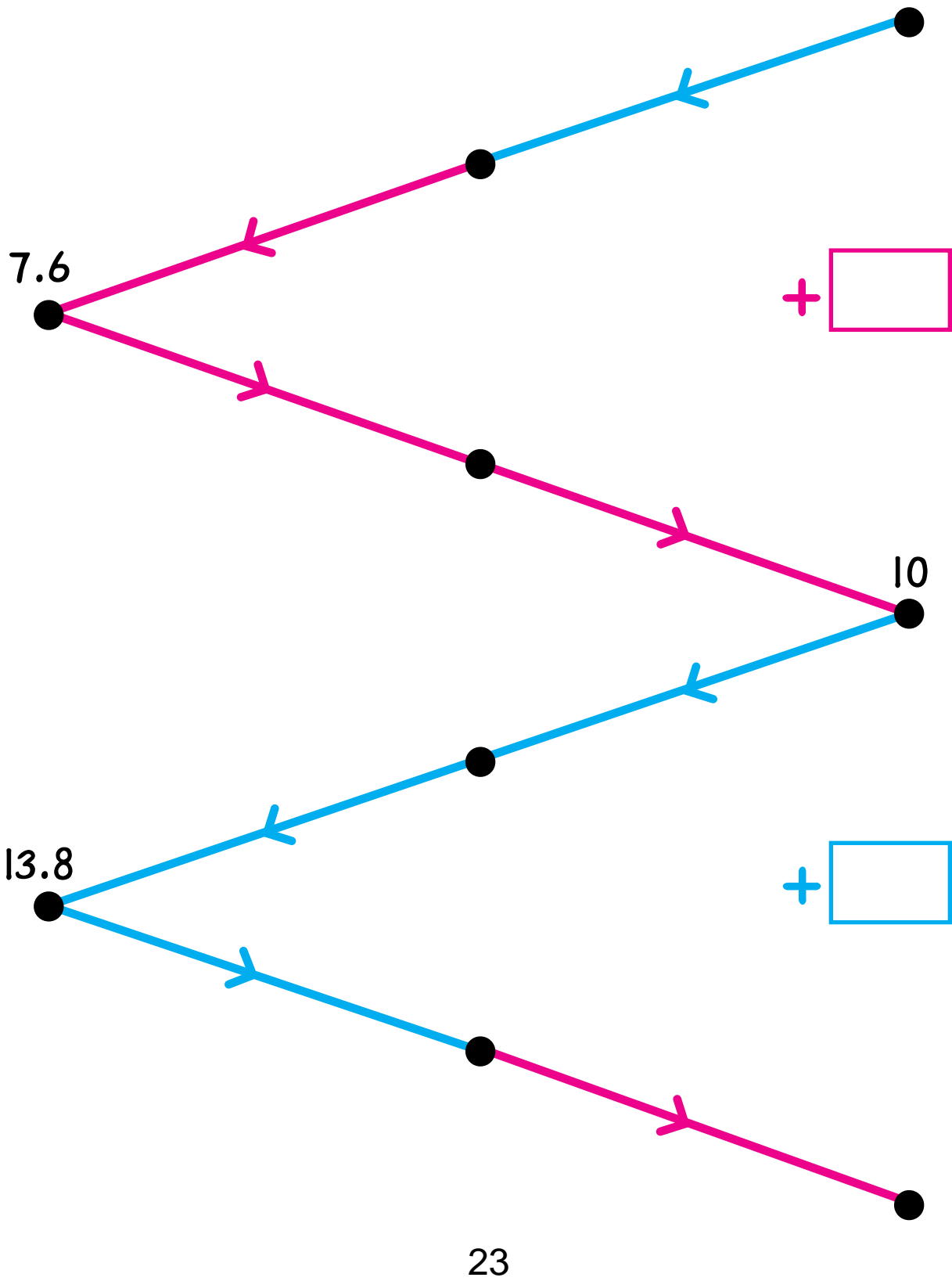
Milo is a secret number.

Milo is in this arrow picture.

+7          $\widehat{8}$          −5

$+3 = \cdots$

Milo          20

Milo could be _____, _____, _____, or _____.

**Even numbers**          **Greater than $\widehat{5}$**
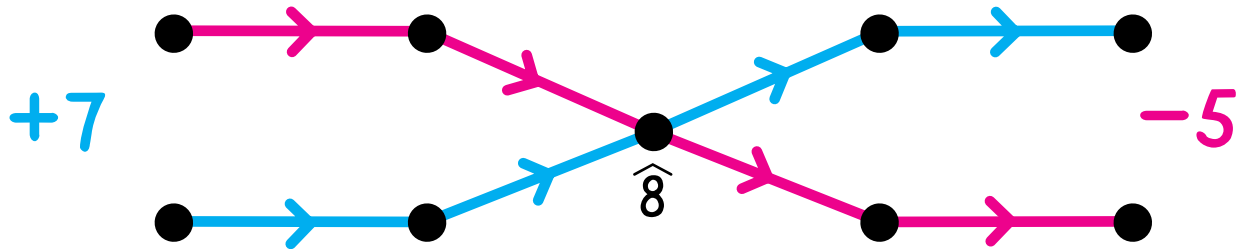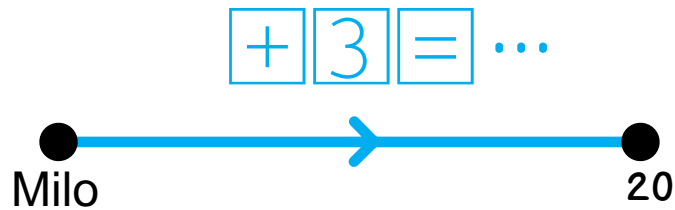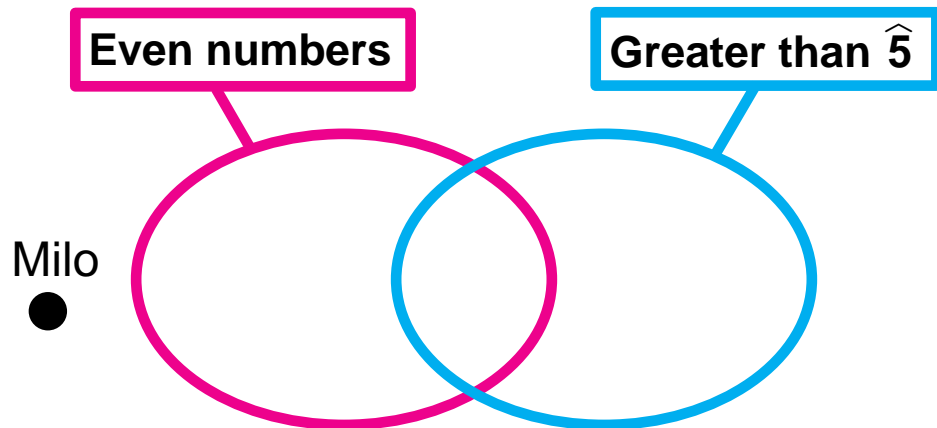
Milo

Who is Milo? _____

Locate these numbers on the number line.

$$\frac{1}{2} \quad \frac{1}{4} \quad \frac{3}{4} \quad \frac{1}{8} \quad \frac{5}{8} \quad \frac{11}{8} \quad \frac{3}{2}$$

0
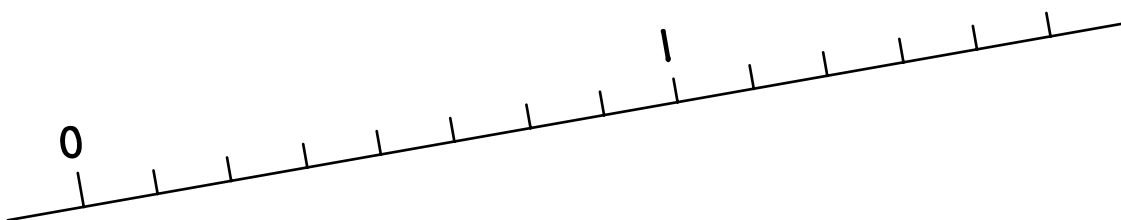
Draw all of the missing red arrows between these dots.

is less than

$\frac{1}{4}$ ●

● $\frac{3}{4} + \frac{5}{8}$

$\frac{3}{4}$ ●

● $\frac{1}{2} + \frac{1}{8}$

In each row, show how many coins are needed to make exactly $1.00. Use exactly the number of coins at the left. The first row is done for you.

| Number of coins | Half-dollar .50 | Quarter .25 | Dime .10 | Nickel .05 | Penny .01 |
|---|---|---|---|---|---|
| 3 | 1 | 2 | 0 | 0 | 0 |
| 4 | | | | | |
| 6 | | | | | |
| 12 | | | | | |
| 20 | | | | | |
| 43 | | | | | |

Find the number of Garden Club members that are in each region of the string picture and record these numbers in the boxes.

There are 48 members in the Garden Club.
Two-thirds of the club members have a rose garden.
One-half of the club members have a vegetable garden.
Seven club members have neither a rose garden nor a vegetable garden.

**Garden Club members**

**Members who have a rose garden**

**Members who have a vegetable garden**

Put a one-digit number in each box to make the calculations correct.

Top left:
$$\square\ \square\ 8\ \square$$
$$\times\ 7$$
$$\square\ 0\ 7\ \square\ 9$$

Top right:
$$\square\ 6\ 9\ \square$$
$$\times\ 4$$
$$1\ 8\ \square\ 8\ 8$$

Middle left (division):
```
        □□□  R=□
  6)35□□
   -□□□□   □00
    _____
     □□□
    -540    □0
    _____
      45
     -□□      □
    _____
       □
```

Middle right (division):
```
        □□□  R=□
 15)53□□
   -□□□□   □00
    _____
     □□□
    -□□□     □0
    _____
     □2□
    -□□□      □
    _____
       6
```

Bottom left:
Multiply.
$$3\ 6\ 0$$
$$\times\ 6\ 8$$

Bottom right:
Divide.
$$9)\overline{38\ 505}$$

28

60 is the smallest number in each arrow picture.
Label the dots.

$\frac{1}{6}\times$      $\frac{1}{3}\times$

$\frac{4}{5}\times$      $\frac{3}{5}\times$

$\frac{3}{2}\times$      $\frac{5}{2}\times$

$\frac{5}{4}\times$      $\frac{3}{10}\times$
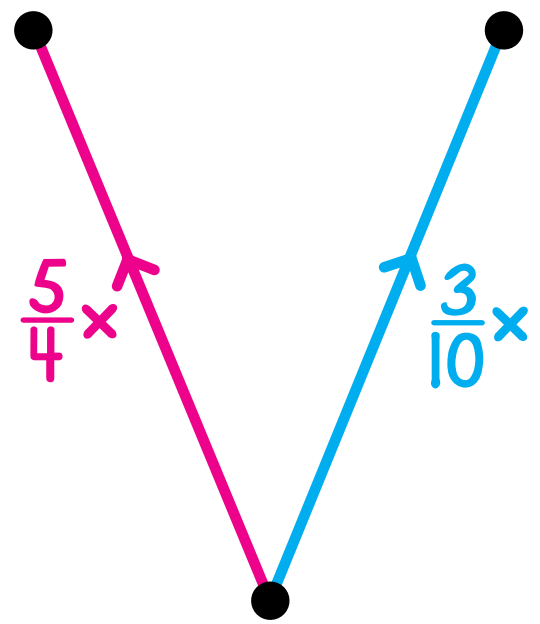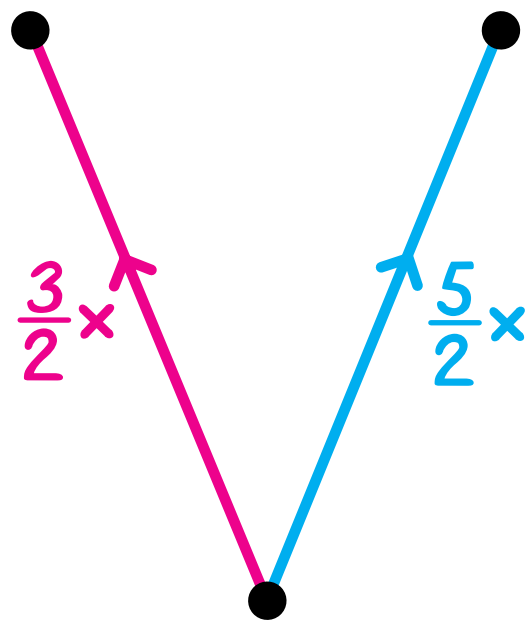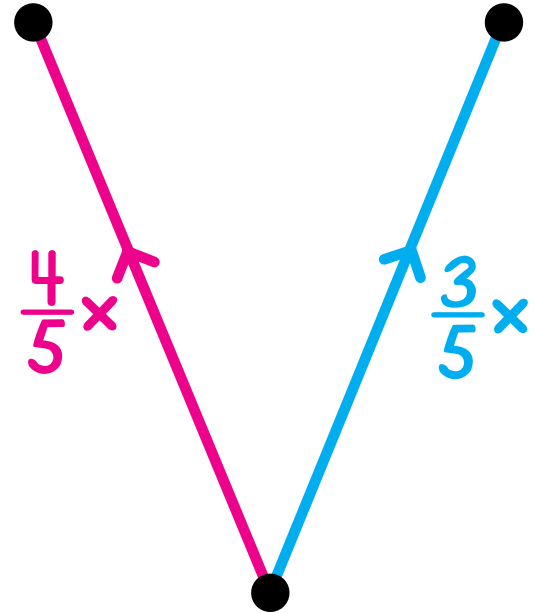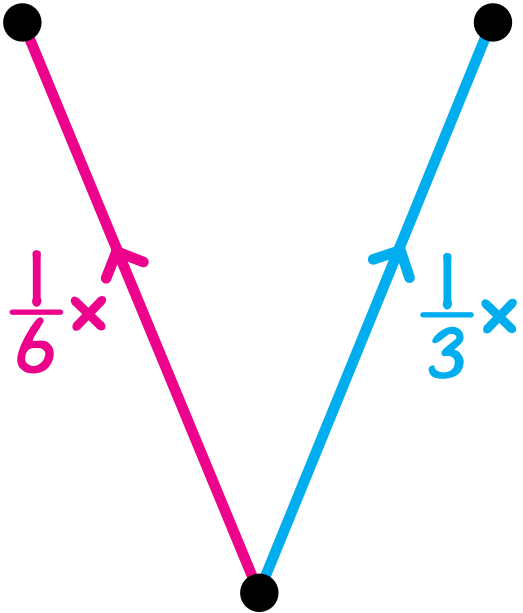
Eks is a secret number.

| The red arrow could be for: |
| :---: |
| 2× |
| 10× |
| $\frac{1}{3}×$ |

| The blue arrow could be for: |
| :---: |
| 4× |
| 10× |
| $\frac{1}{3}×$ |

Eks ●      ●      ● 6
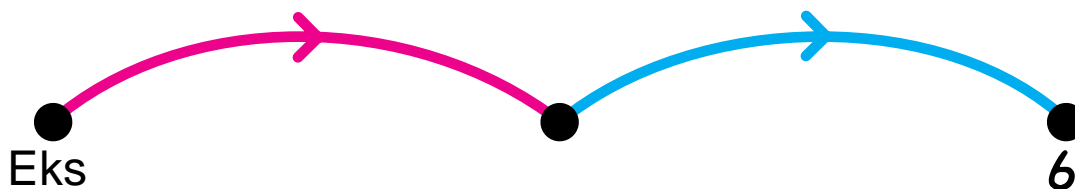
Eks could be _____, _____, _____, _____, _____, _____, _____, or _____.

Eks can be put on this Minicomputer with exactly these two checkers.

$$\bullet \quad \textcircled{7}$$
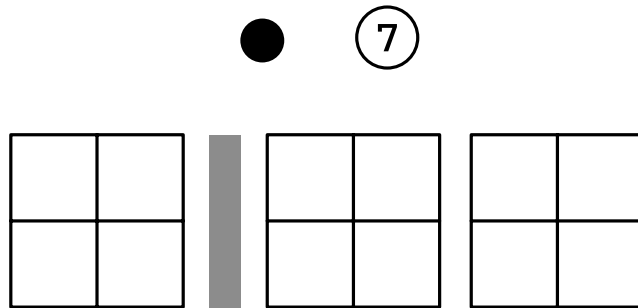
Eks could be _____, _____, _____, or _____.

Clue 3

Eks can be written by adding parentheses to this expression.

$$4 \times (0.2 + (0.5 \div 2))$$

Who is Eks? _____

Write a name for each number using exactly four 7s and no other digits. You may use the following symbols as often as you wish.

$$+ \quad - \quad (\ ) \quad \times \quad \div$$

The number 9 is done for you.

_____ = 1     _____ = 2

_____ = 3     _____ = 4

_____ = 7     _____ = 8

$((7 + 7) \div 7) + 7$ = 9     _____ = 10

_____ = 15     _____ = 18

_____ = 28     _____ = 42

_____ = 35     _____ = 50