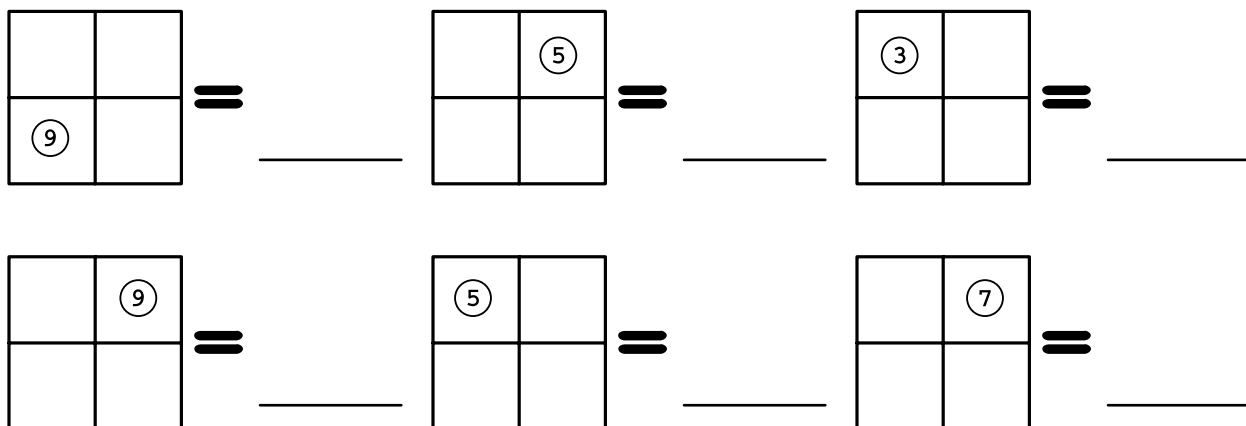# Variety
of
Problems #4

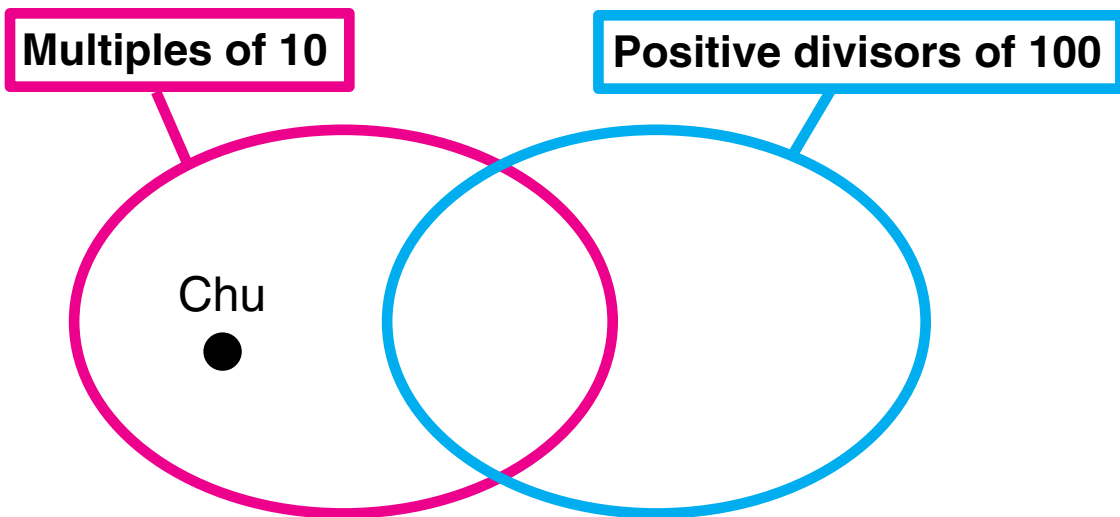Chu is a secret number.

| Clue 1 |

Chu is one of these numbers.

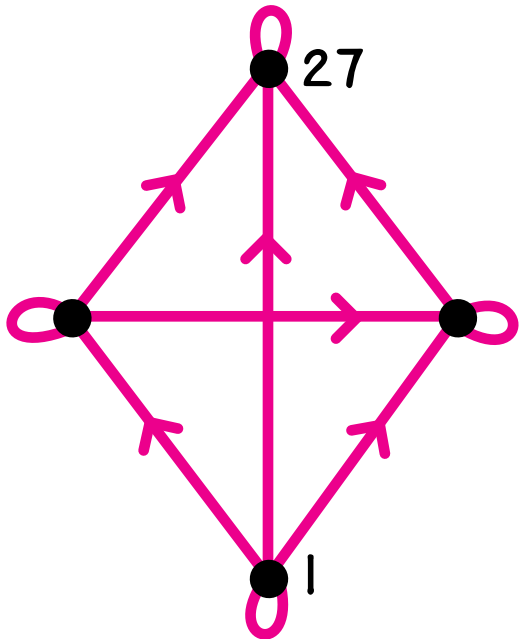(grid with ⑨) = _____   (grid with ⑤) = _____   (grid with ③) = _____

(grid with ⑨) = _____   (grid with ⑤) = _____   (grid with ⑦) = _____
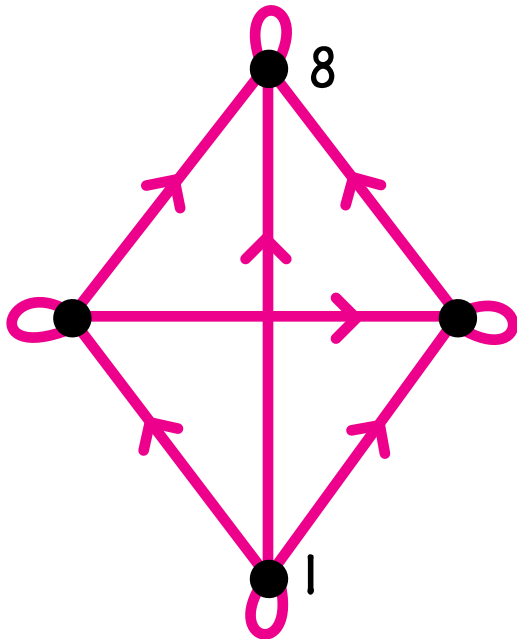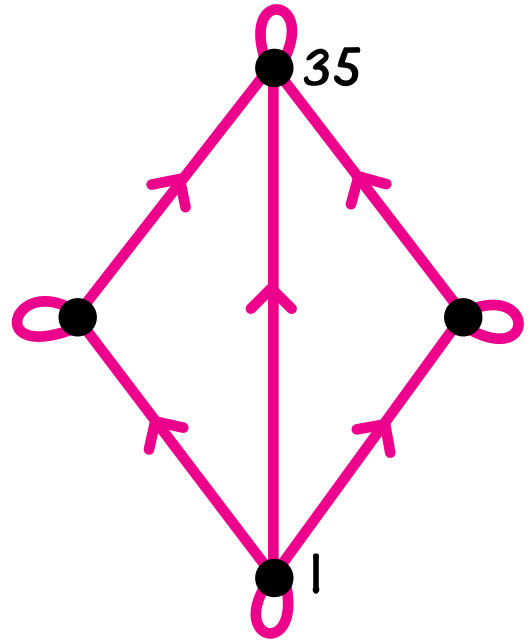
| Clue 2 |

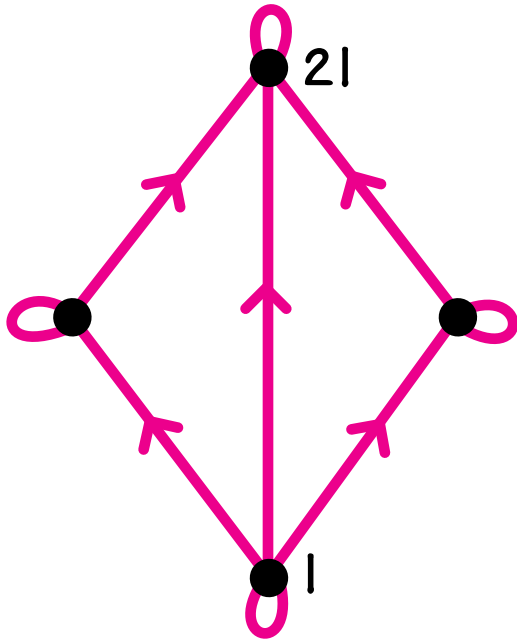**Multiples of 10**   **Positive divisors of 100**
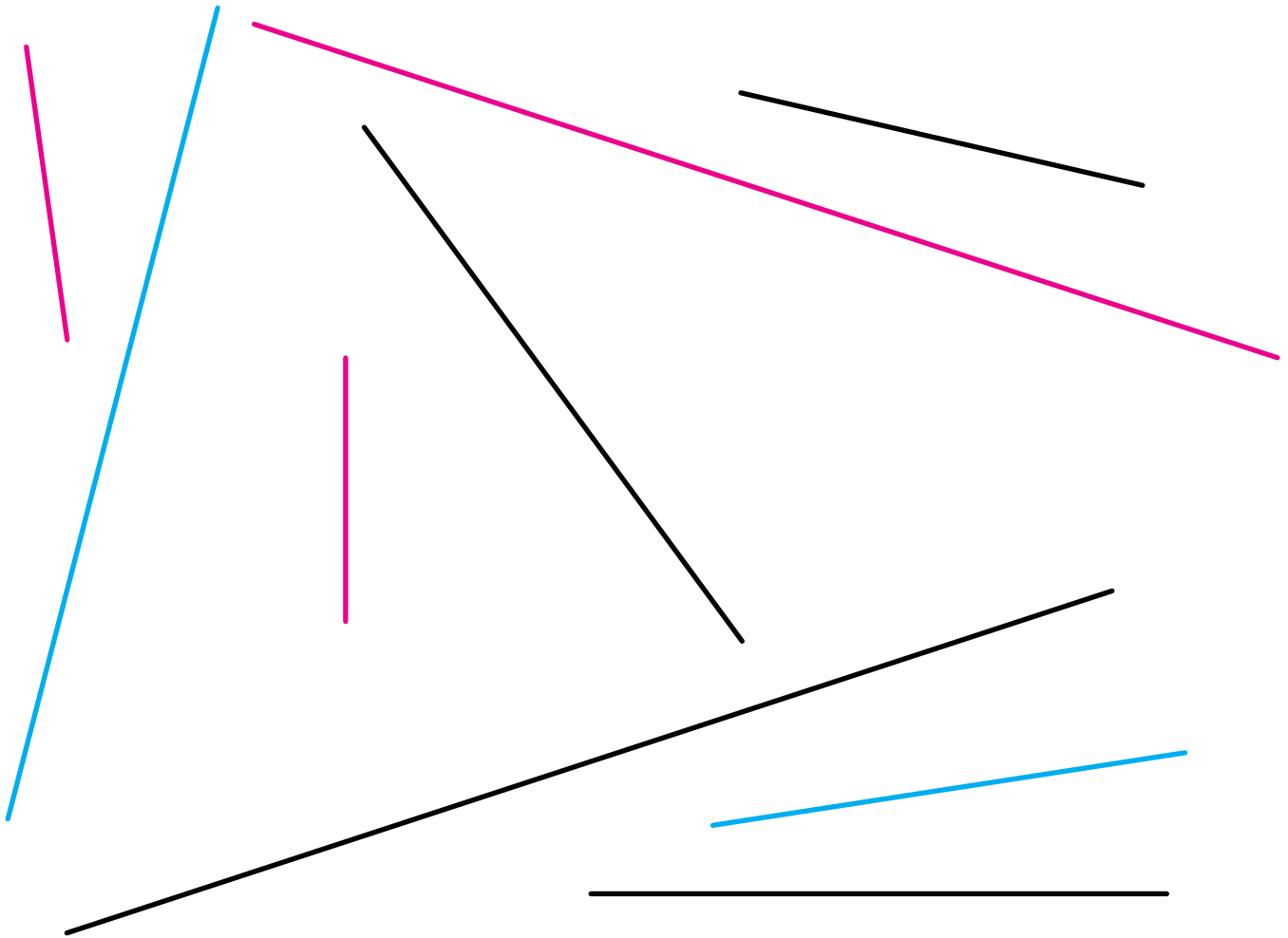
Chu
●

Who is Chu? _____

Label the dots.

is a positive divisor of

21

35

8

27

Find the longest line segment on this page. Label it **A**. What is its length? _____cm

Find the shortest line segment on this page. Label it **B**. What is its length? _____cm

Find the line segment with a length closest to 6 cm. Label it **C**.
What is its length? _____cm
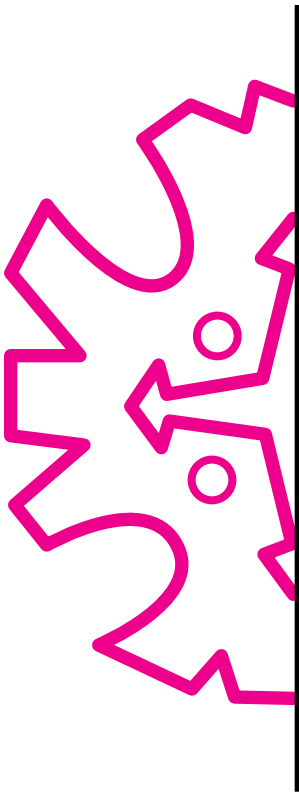How much longer or shorter than 6 cm is it? _____cm
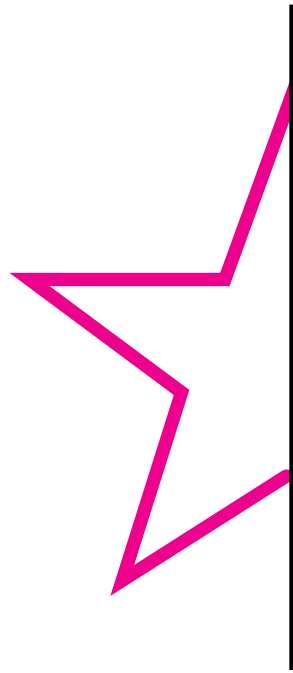
Find the line segment with a length closest to 10 cm. Label it **D**.
What is its length? _____cm
How much longer or shorter than 10 cm is it? _____cm

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


9

15

× ☐

+ ☐

1
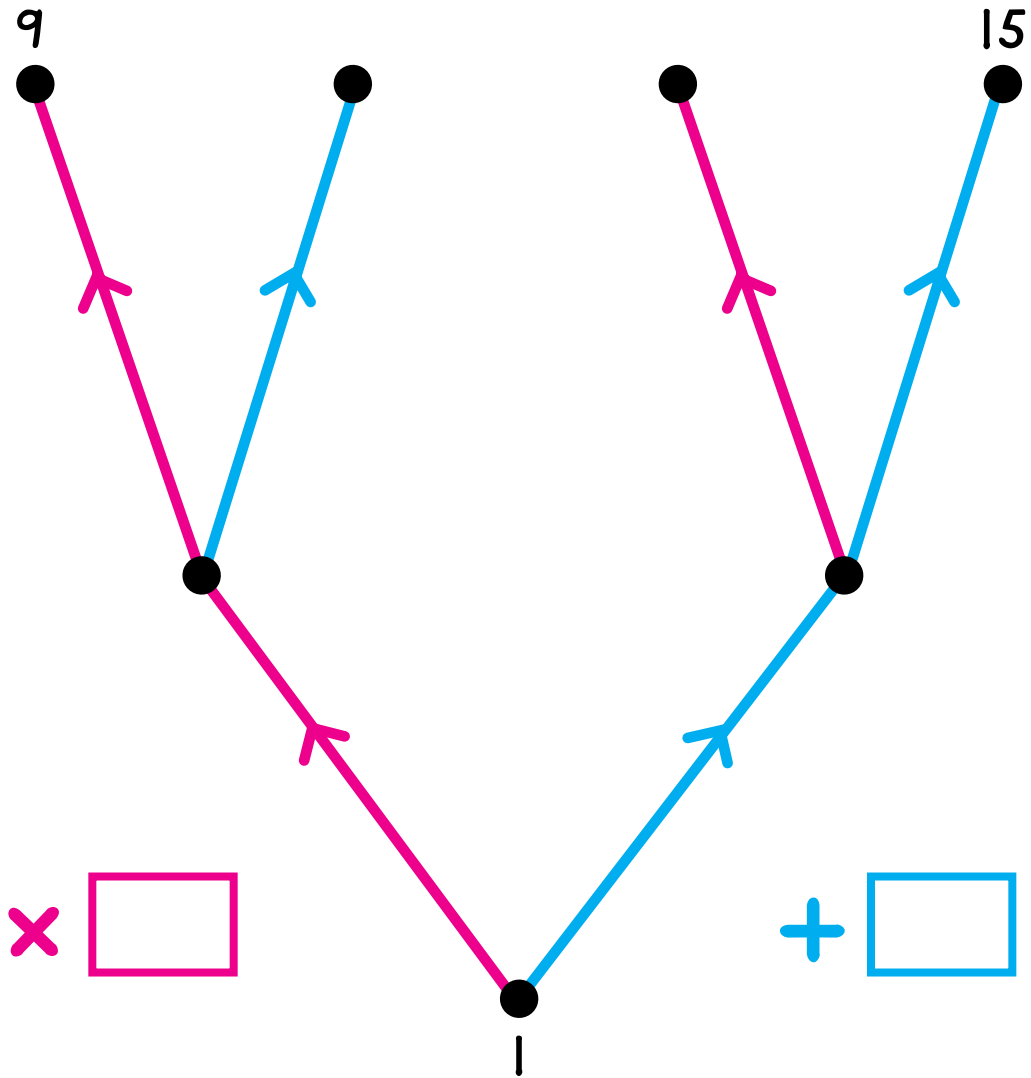
Draw what would appear in a mirror if it were placed along the black line. The drawings do not have to be exact.

The distances from the planets to the sun are given below in astronomical units. Using this information, label the six planets that are closest to the sun in the picture below.

Mercury	0.387	Earth	1.000
Pluto	39.44	Saturn	9.539
Mars	1.524	Neptune	30.06
Venus	0.723	Uranus	19.18
		Jupiter	5.203

Sun
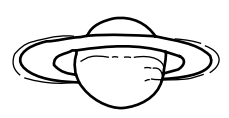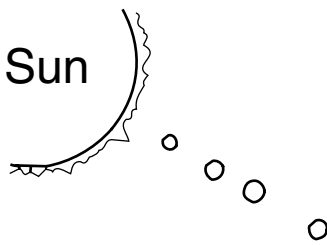
Three of the planets are so far away from the sun that they cannot be shown on this page in their relative positions to the other planets. Which three planets are they? _____, _____, and _____

Note: An astronomical unit is the average distance from the Earth to the sun.

Add parentheses to each number sentence to make it true.

$$7 \times 8 + 4 = 60$$
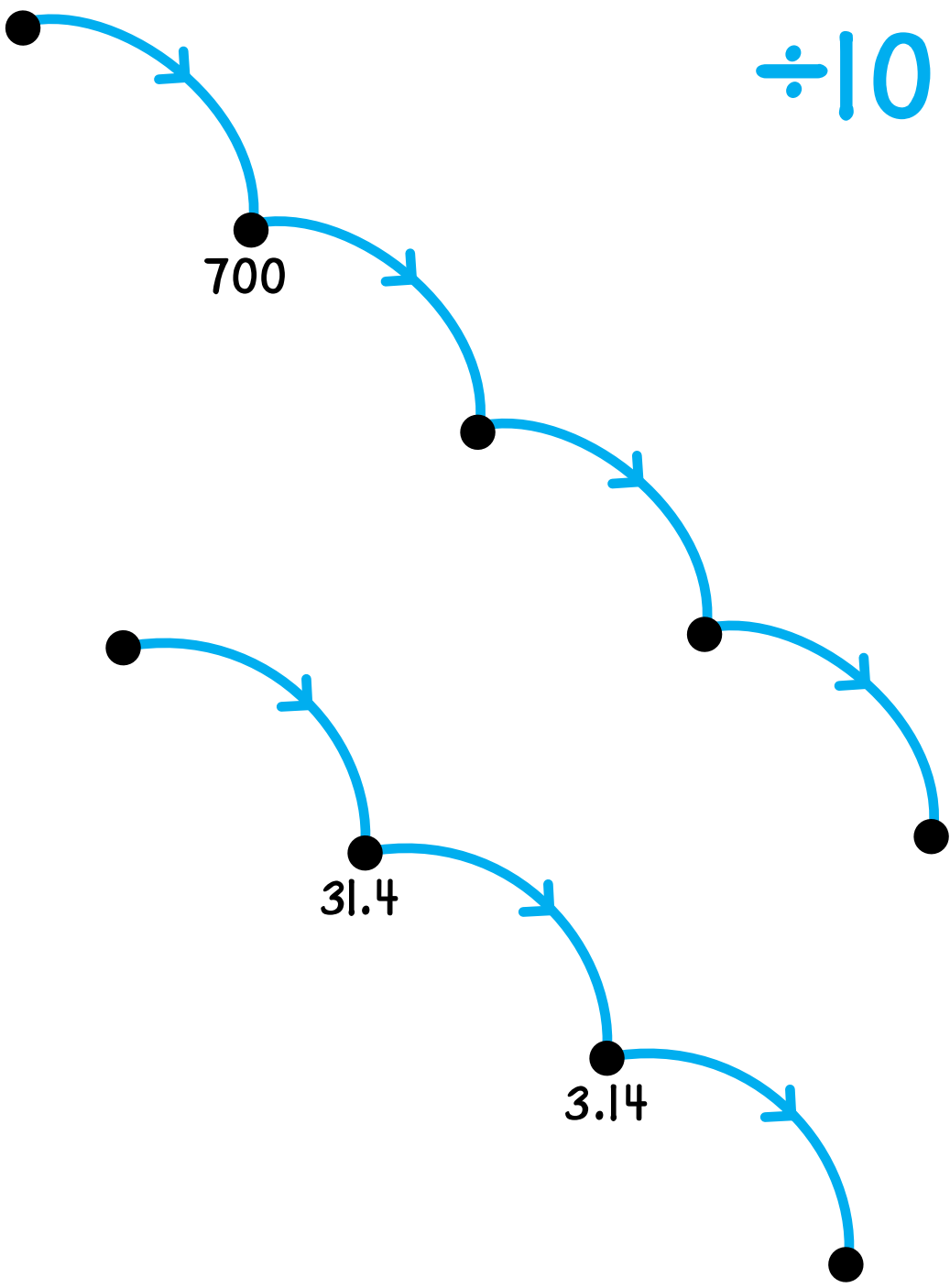
$$7 \times 8 + 4 = 84$$

$$13 - 7 + 9 = \widehat{3}$$

$$13 - 7 + 9 = 15$$
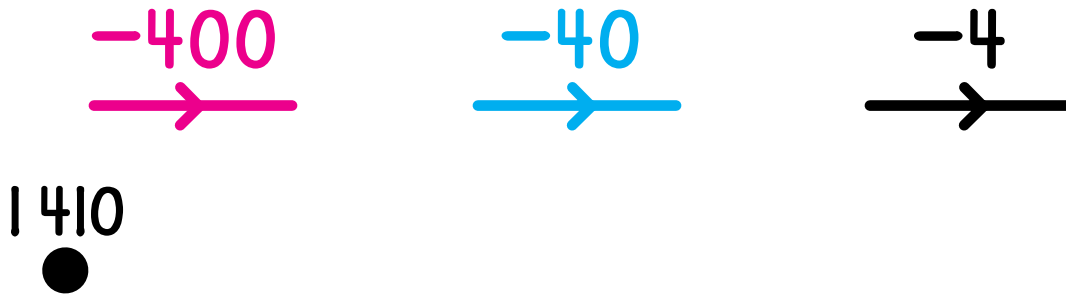
$$25 - 18 \div 2 = 3.5$$

$$25 - 18 \div 2 = 16$$

Label the dots.

$\div 10$

- 7000
- **700**
- 70
- 7
- 0.7

- 314
- **31.4**
- **3.14**
- 0.314

Build an arrow road from 1 410 to the least possible positive number using these arrows.
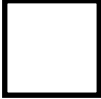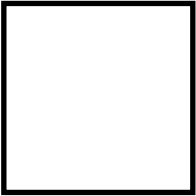
−400 →   −40 →   −4 →

1 410
●

How many red arrows did you use? _____
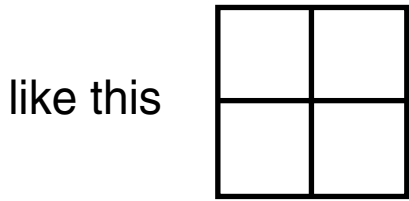How many blue arrows? _____
How many black arrows? _____

Record the answer to this division problem.

$$4 \overline{)1\,410}$$

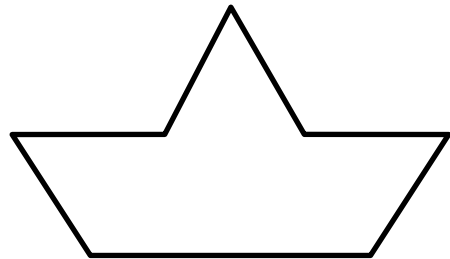Four small squares ▢ fill up this big square ▢
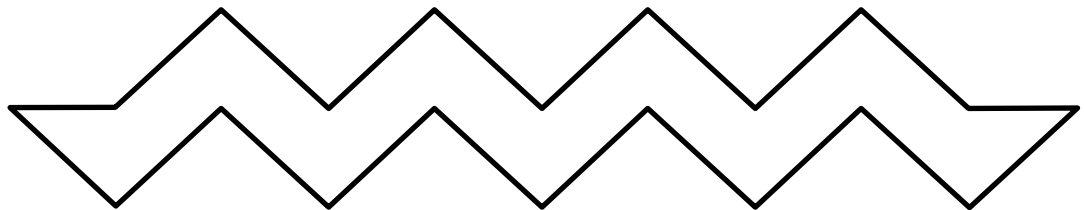
like this ⊞

Use three parallelograms ▱ to fill up this boat.

Use a ruler to draw the lines.

Use nine triangles △ to fill up this snake.

Use seven rectangles ▭ to fill up this snake.
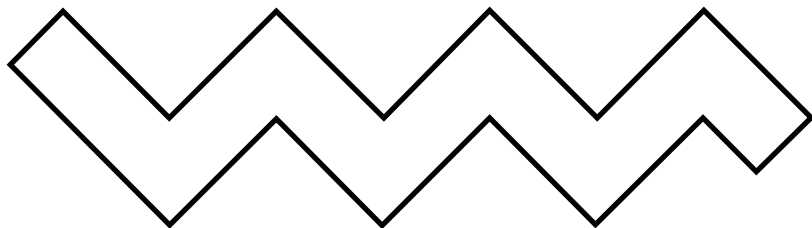
The red label is one of these:

Multiples of 3
Multiples of 4
Positive divisors of 24
Positive divisors of 18
Greater than $\widehat{10}$
Positive prime numbers

The blue label is one of these:

Multiples of 3
Multiples of 4
Positive divisors of 24
Positive divisors of 18
Greater than $\widehat{10}$
Positive prime numbers

Label the strings.

12 ●

6 ●
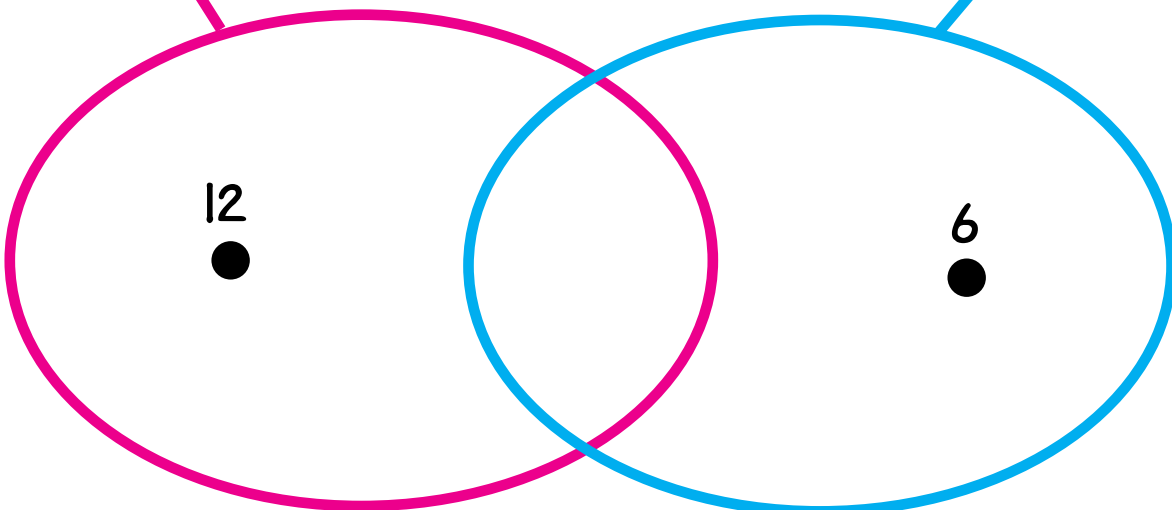
WIPE-OUT

Fill in the boxes for the arrows.

268.79

260.79
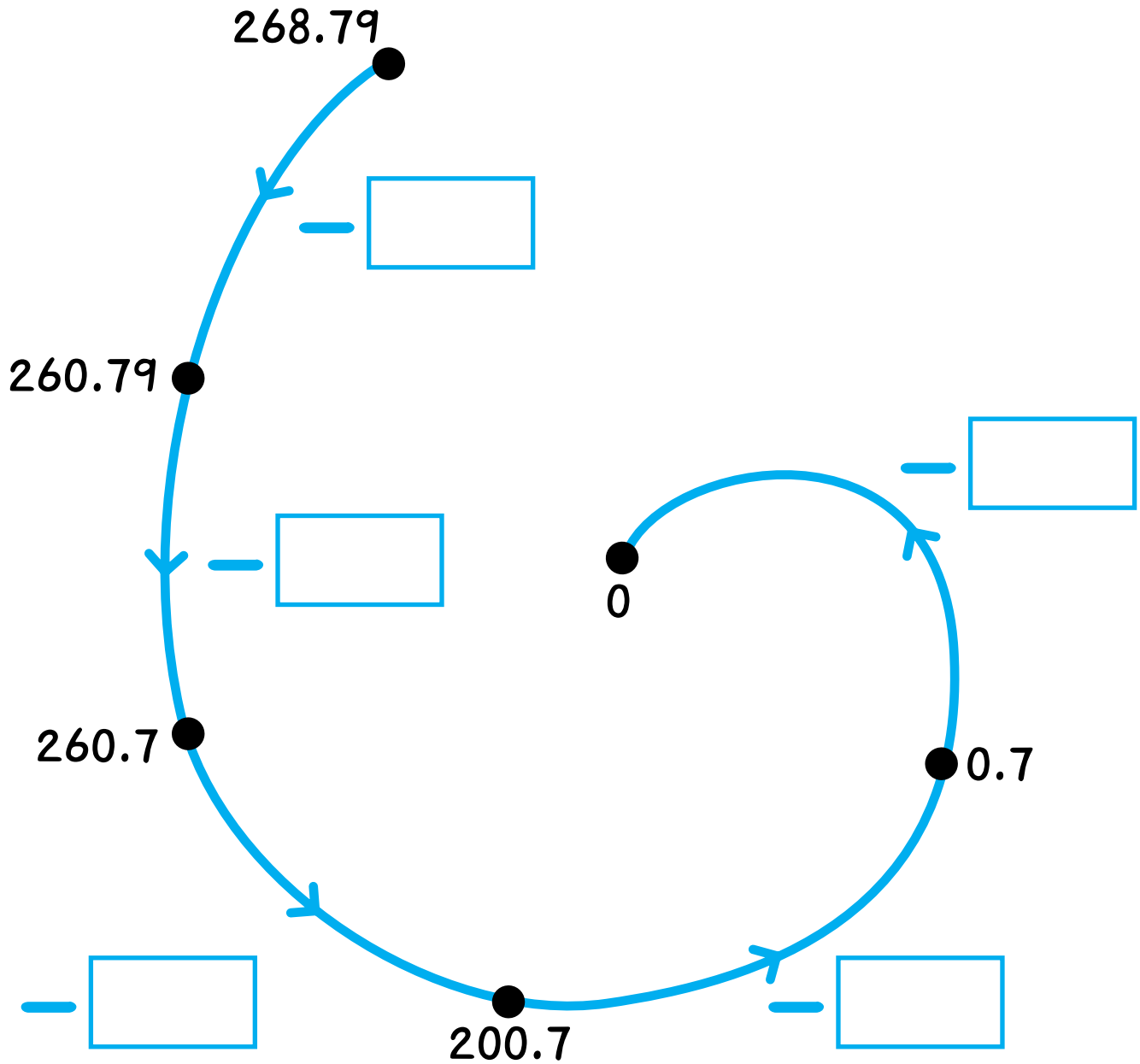
260.7

200.7

0

0.7
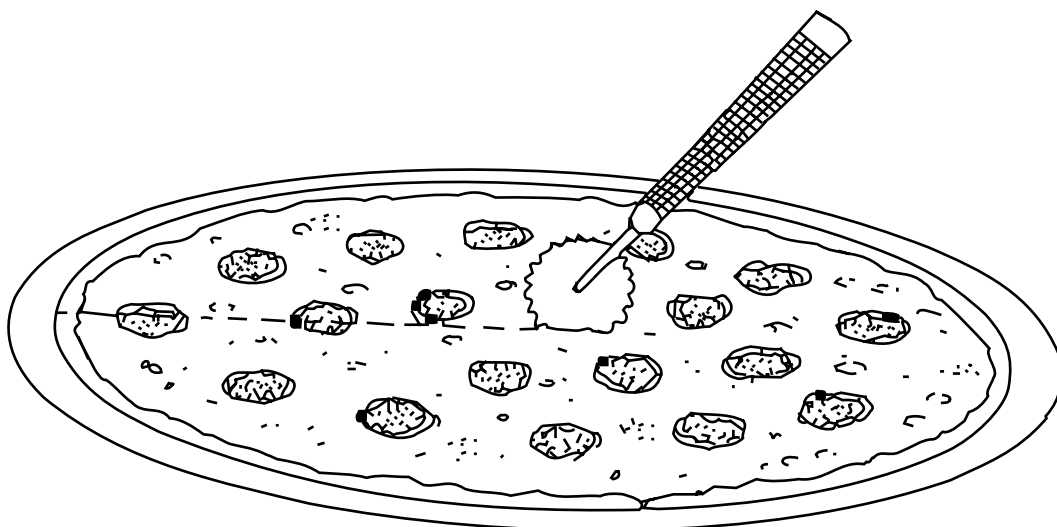
Pizza Pie

Tom, Cara, and Zoe are going to have pizza for lunch. Tom wants $1\frac{1}{2}$ pizzas, Cara and Zoe each want $\frac{3}{4}$ of a pizza. How many pizzas should they order? _____

Will there be any pizza left over? _____

Each pizza comes cut into eight pieces.

How many pieces does Tom want? _____
How many pieces does Cara want? _____
How many pieces does Zoe want? _____

Eraser Gremlin Strikes Again!

Fill in the boxes.

$$
\begin{array}{r}
7\;\boxed{8}\;3 \\
+\,4\,5\,\boxed{6} \\
\hline
1\,2\,3\,9
\end{array}
\qquad
\begin{array}{r}
1\,0\,0 \\
-\;\boxed{7}\,2 \\
\hline
2\,\boxed{8}
\end{array}
\qquad
\begin{array}{r}
7\,\boxed{4} \\
\times\quad 4 \\
\hline
2\,\boxed{9}\,6
\end{array}
$$

$$
\begin{array}{r}
3\,\boxed{8} \\
\times\;\boxed{5}\,6 \\
\hline
2\,2\,8 \\
1\,\boxed{9}\,0\,0 \\
\hline
2\,1\,2\,8
\end{array}
\qquad\qquad
\begin{array}{r}
\boxed{8} \\
7\,\overline{)\,5\,\boxed{6}}
\end{array}
$$

15

What fraction of each shape is colored red?
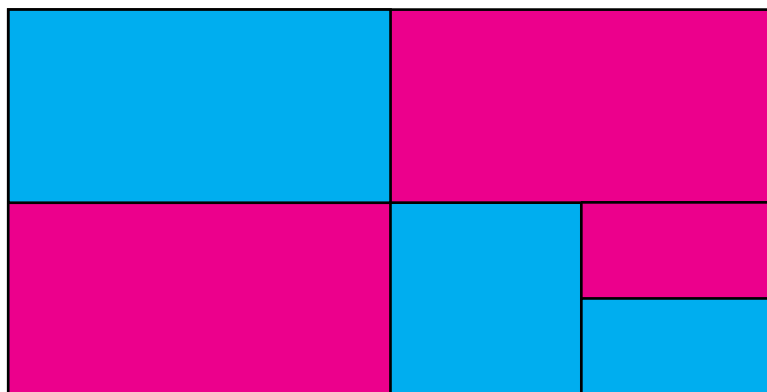What fraction of each shape is colored blue?

Red: _____
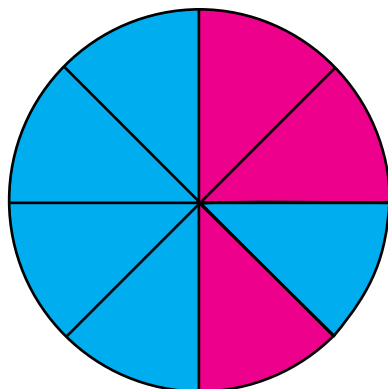
Blue: _____
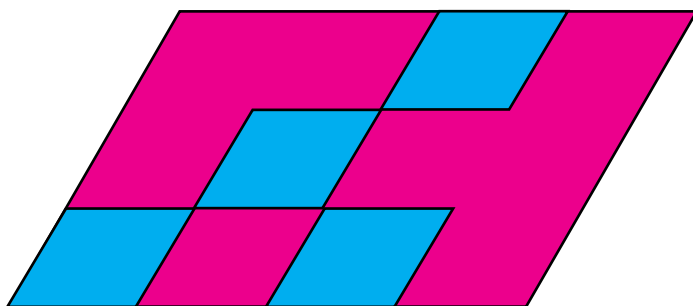
Red: _____

Blue: _____
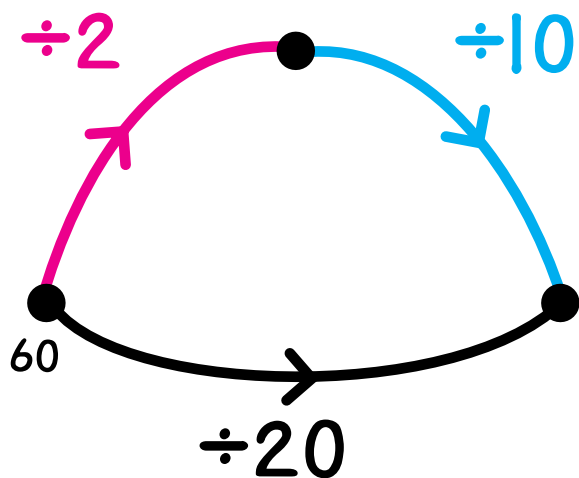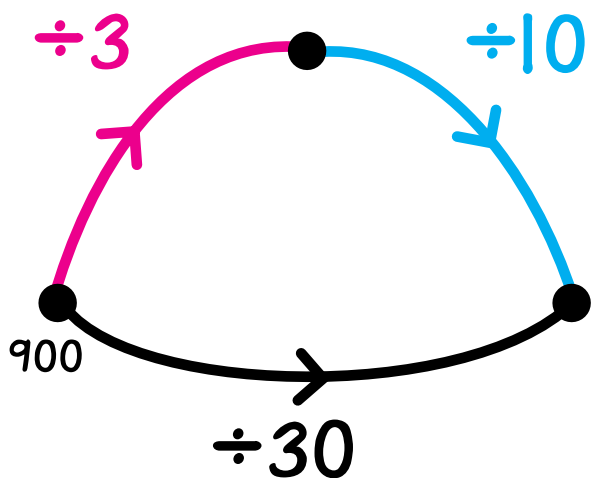
Red: _____

Blue: _____

Label the dots in the arrow pictures and then complete the number sentences.

÷2   ÷10

60

÷20

$60 \div 20 = \underline{}$

÷3   ÷10

900

÷30

$900 \div 30 = \underline{}$

÷5   ÷10

450

÷50

$450 \div 50 = \underline{}$

÷7   ÷10

56
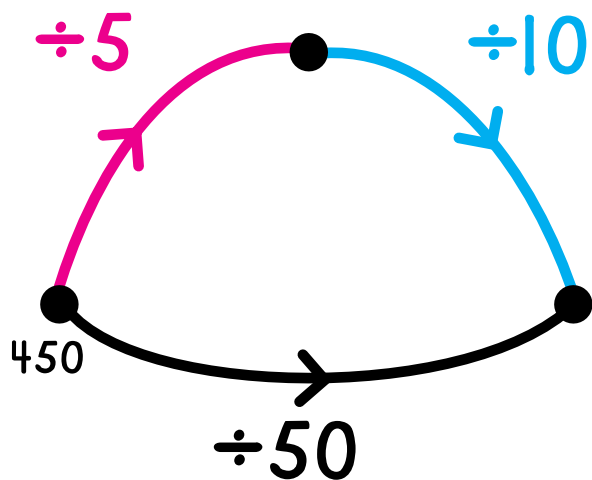
÷70
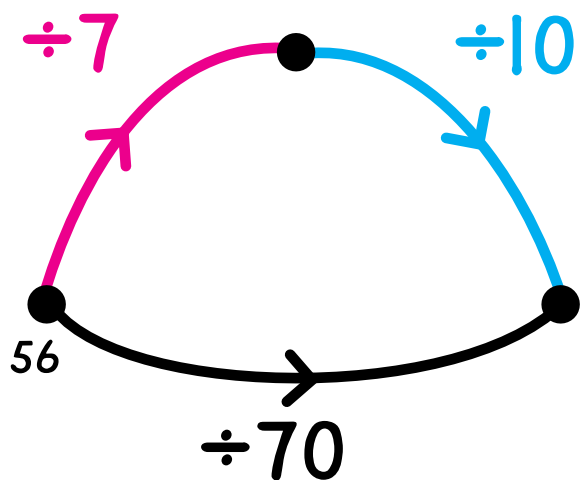
$56 \div 70 = \underline{}$
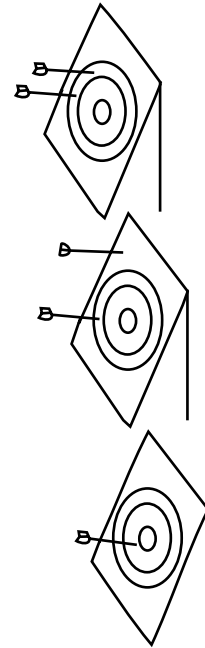
Andrea, Lucille, and Carlos had an archery contest. They shot on three different days, but Andrea and Carlos were each sick one day. Their scores for each day are listed in the table. Complete the tally by listing the winning archer for each day and by finding each child's total score.

	Andrea	Lucille	Carlos	Daily Winner
Oct. 2	sick	80	79	
Oct. 9	52	72	69	
Oct. 16	88	31	sick	
Total				

Who was the "daily winner" most often? _____
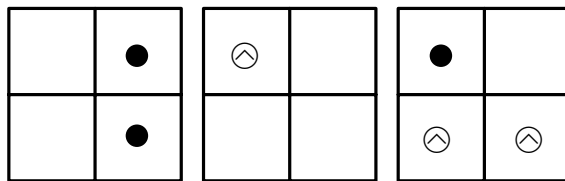
Who had the highest total score? _____

List the score for each archer's best day. Andrea _____ Lucille _____ Carlos _____ Who had the best one-day score? _____
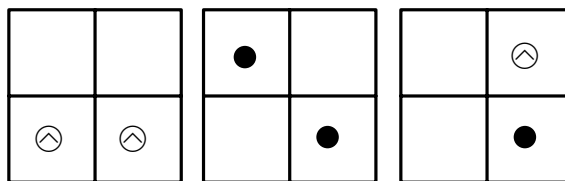
Calculate each archer's average score. Andrea _____ Lucille _____ Carlos _____ Who had the best average? _____

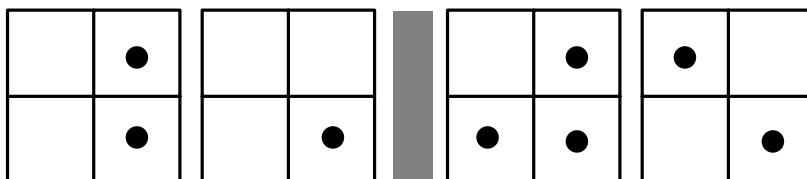Who do you think should be declared the best archer? _____ Why? _____

18

Move exactly one checker to put 437 on the Minicomputer.

Move exactly one checker to put $\overset{\frown}{211}$ on the Minicomputer.
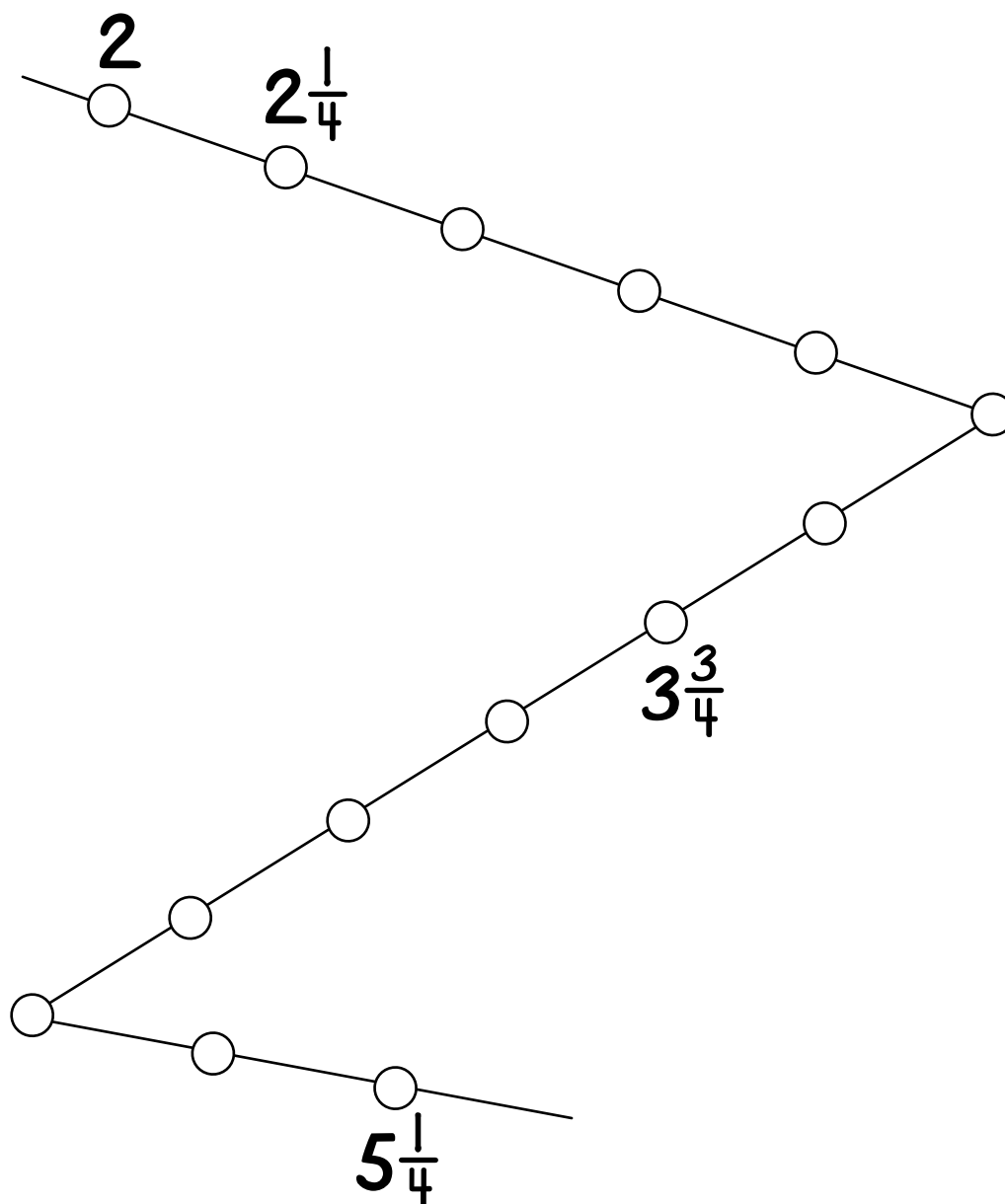
Move exactly one checker to put 51.88 on the Minicomputer.

Move exactly one checker to put 20.12 on the Minicomputer.
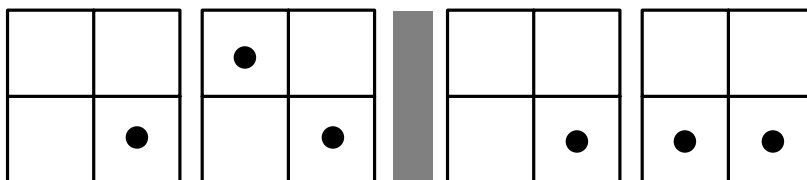
Label the dots on this zig-zag number line.

2

$2\frac{1}{4}$

$3\frac{3}{4}$

$5\frac{1}{4}$

Color in red the dot for $2\frac{1}{4} + \frac{3}{4}$.
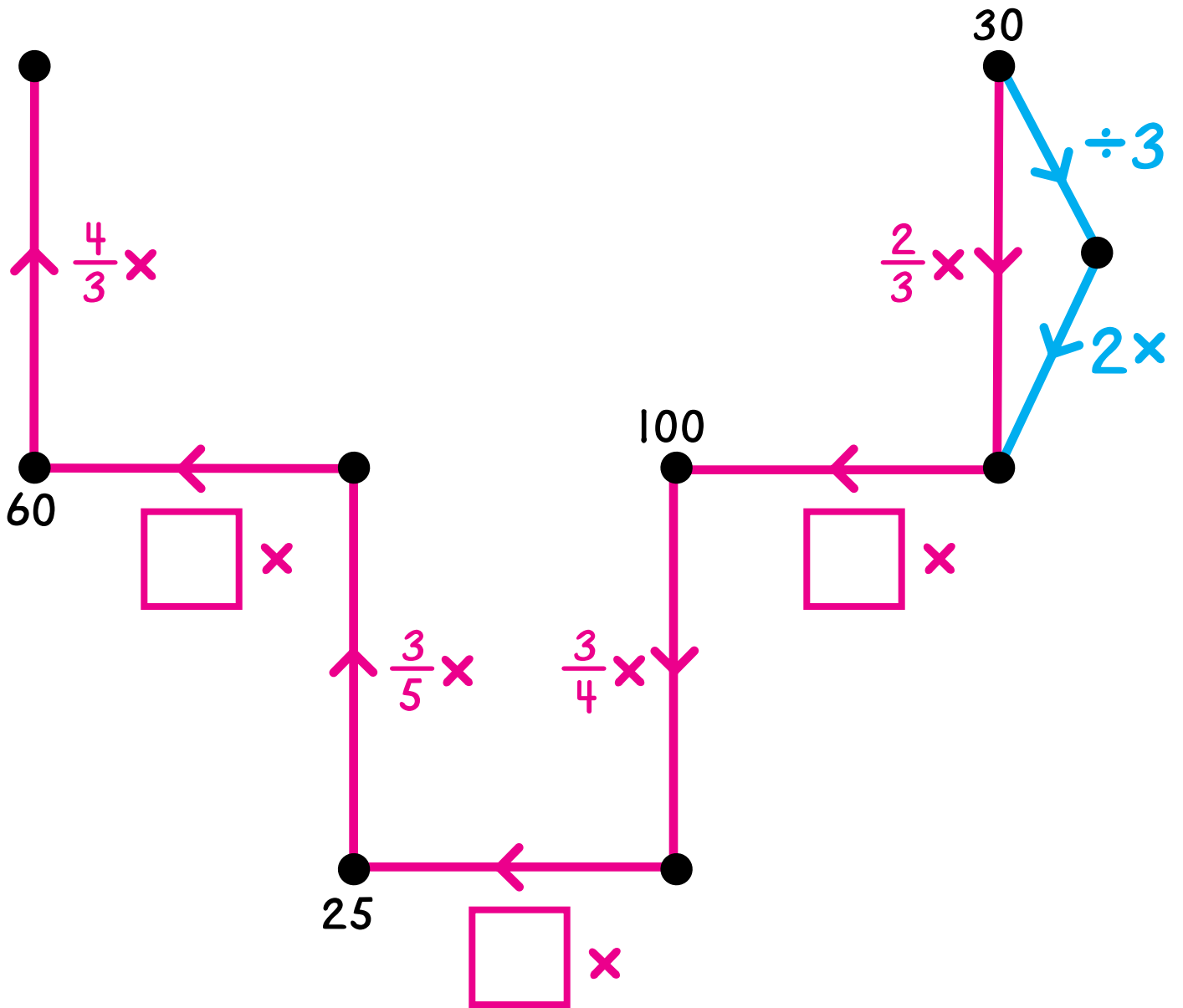
Color in blue the dot for $2\frac{1}{4} + 1\frac{3}{4}$.

Color in yellow the dot for $5\frac{1}{4} - \frac{3}{4}$.

Label the dots and fill in the boxes for the arrows.

30

$\div 3$

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

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

$2\times$

100

60

$\boxed{}\times$

$\boxed{}\times$

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

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

25

$\boxed{}\times$

Match names for the same number. One pair is matched for you. You do not have to do the computations.

$76 + \widehat{20}$
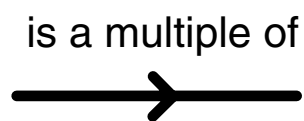
15×6

6×78

$6 \times \widehat{20}$

$\widehat{16} + \widehat{16} + \widehat{16}$

$76 - 20$

$\widehat{120}$

16×6

$(14 \times 6) + 6$

$(6 \times 70) + (6 \times 8)$

$(14 \times 6) + 12$

$3 \times \widehat{16}$

+1   −1   is a multiple of

Use these arrows to build a shortest arrow road between each pair of numbers. It is possible to use fewer than four arrows in each road.

● 70   ● 36

● 28   ● 10

● 31   ● 14

Abe made 100 cookies. He put frosting on 75 cookies and sprinkles on 50 cookies. Explain how he could do this.

Twyla interviewed 200 students to find out what they watched on TV last night. 65 students said they did not watch TV last night; 60 students watched a news program; and 100 students watched the music awards program.
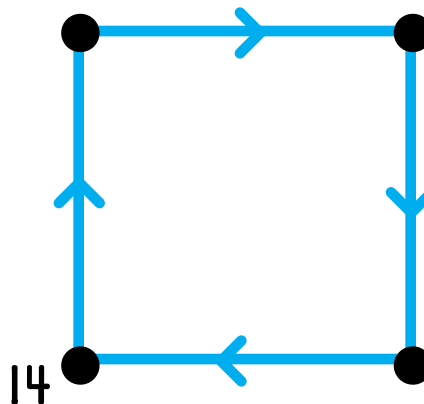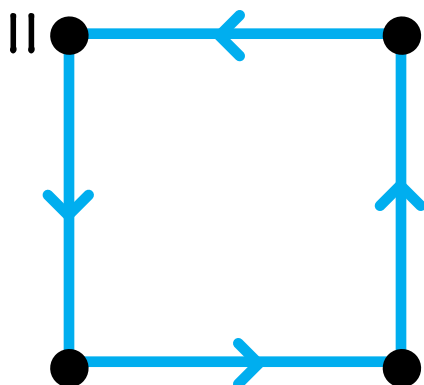
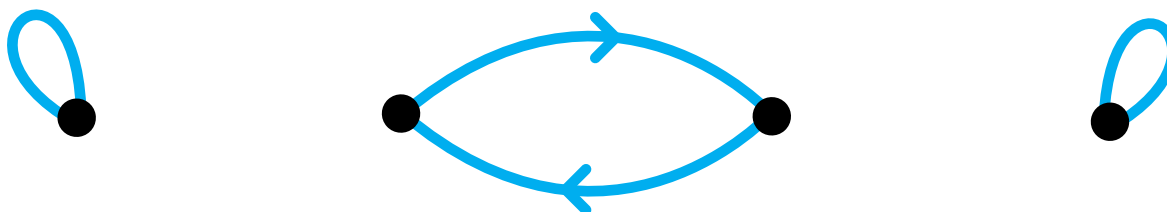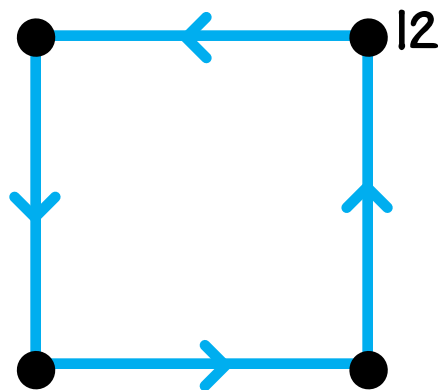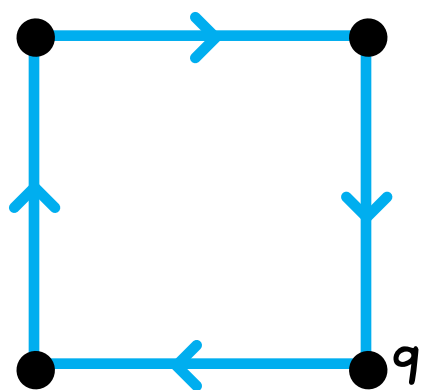Explain how these results are possible.

Put the 20 number friends

0 1 2 3 4 5 6 7 8 9
10 11 12 13 14 15 16 17 18 19

into this picture. Some numbers are already placed.

3×₂₀

Make trades on the binary abacus to show each number with at most one checker on a board. Write the number sentence suggested by your configuration. The first problem is done for you.

$\dfrac{7}{16} =$ | 2 | 1 | $\frac{1}{2}$ | $\frac{1}{4}$ | $\frac{1}{8}$ | $\frac{1}{16}$ (checkers shown) $=$ | 2 | 1 | $\frac{1}{2}$ | $\frac{1}{4}$ | $\frac{1}{8}$ | $\frac{1}{16}$ (one checker each) $= \dfrac{1}{4} + \dfrac{1}{8} + \dfrac{1}{16}$

$\dfrac{5}{8} =$ (abacus) $=$ (empty abacus) $=$ _____

$\dfrac{8}{16} =$ (abacus) $=$ (empty abacus) $=$ _____

$\dfrac{10}{4} =$ (abacus) $=$ (empty abacus) $=$ _____

Label the dots and fill in the blank for the label of the blue string.

Positive divisors of 18

Positive divisors of _____
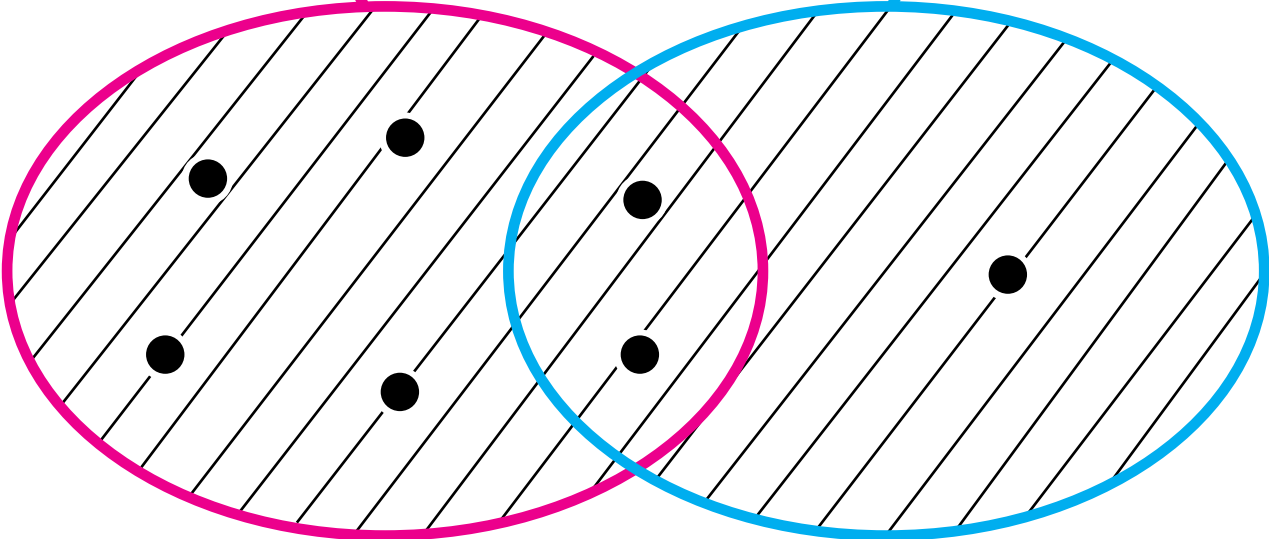
Tok and Kot are secret numbers. Use these three clues in any order to find out which numbers they are.
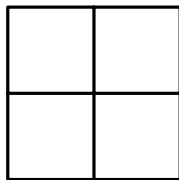
Tok and Kot each can be put on this Minicomputer using exactly one of these checkers.
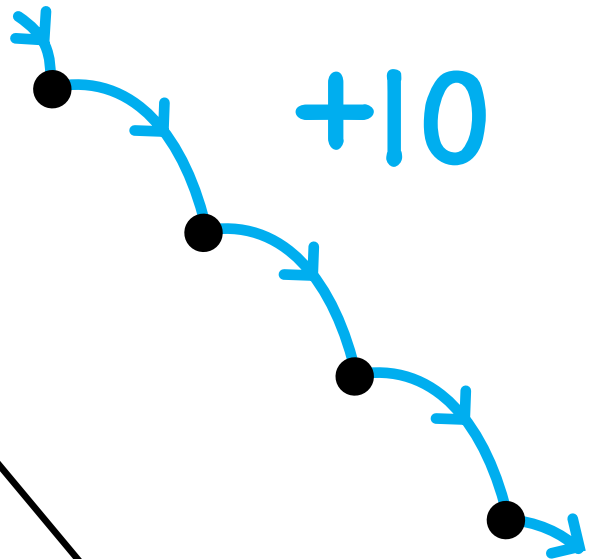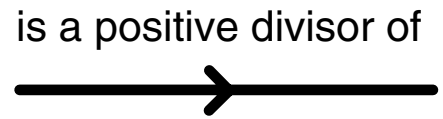
⑥   ⑦   ⑧   ⑨
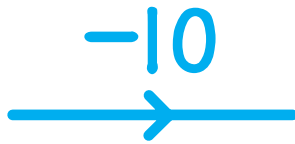
Tok and Kot are on the same +10 arrow road.

+10

Tok is less than Kot and both are square numbers.

Who is Tok? _____

Who is Kot? _____
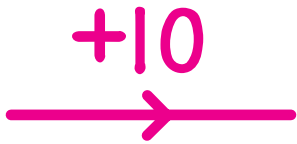
$$\xrightarrow{\text{+10}} \qquad \xrightarrow{\text{−10}} \qquad \xrightarrow{\text{is a positive divisor of}}$$

Use these arrows to build a shortest arrow road between each pair of numbers. It is possible to use fewer than four arrows in each road.

● 7

● 200

● 45

● 175

● 18

● 178

Zel is one of the 20 number friends.

$$0 \quad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad 8 \quad 9$$
$$10 \quad 11 \quad 12 \quad 13 \quad 14 \quad 15 \quad 16 \quad 17 \quad 18 \quad 19$$

Clue 1

$$\text{Zel} \times_{20} 6 = \text{Zel}$$

Zel could be _____, _____, _____, _____, or _____.

Clue 2

$$\text{Zel} +_{20} 16 = \text{Zel} \times_{20} 4$$

Who is Zel? _____

Label each arrow with x some whole number. Many solutions are possible.
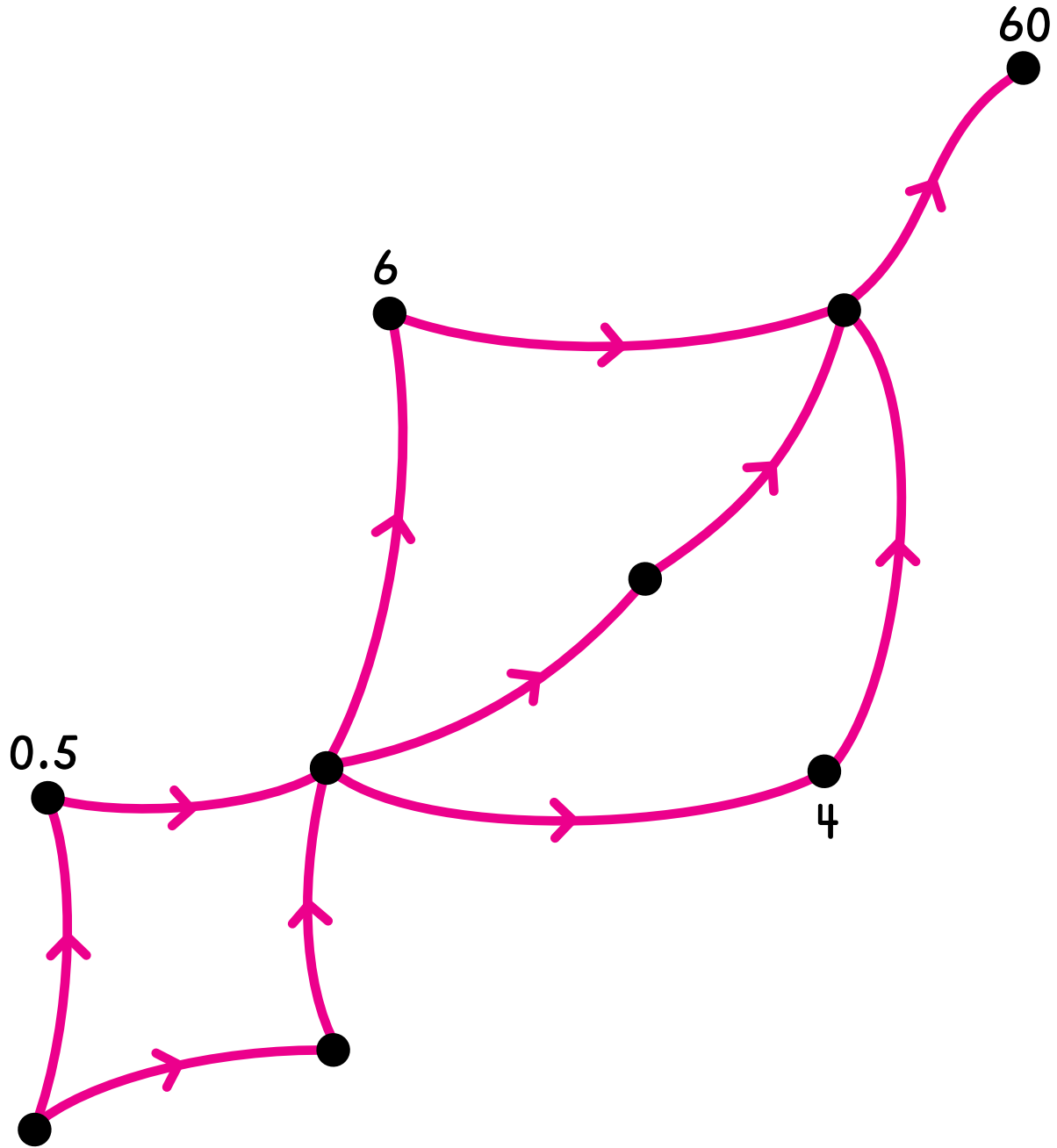
Pif is a secret number.

Clue 1

Pif

$+3=\cdots$ $+0.8=\cdots$

0   18.4

Pif could be ____, ____, ____, ____, ____, ____, ____, ____, and so on.

Clue 2

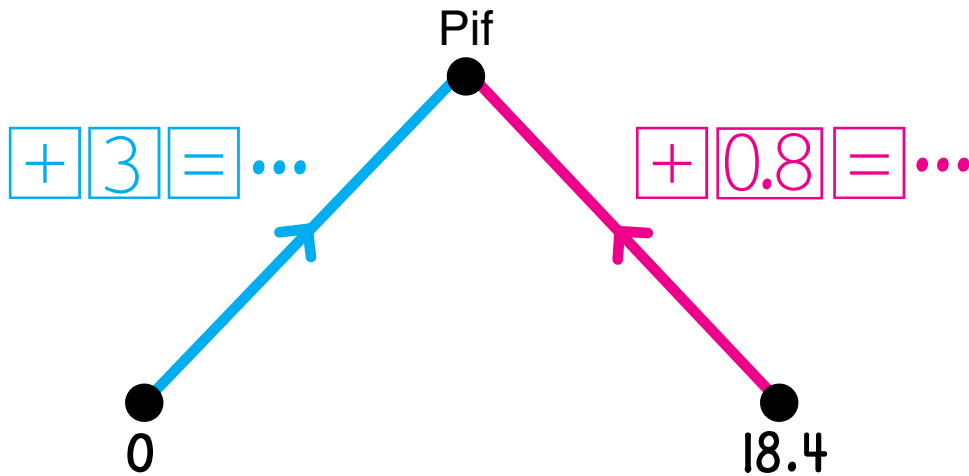Pif can be put on the ones board of the Minicomputer using exactly one of these checkers:
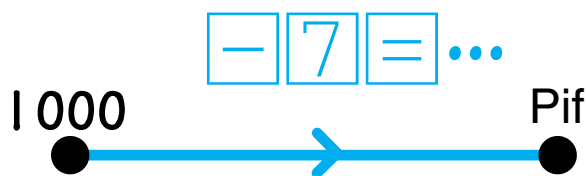
② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

Pif is ⊞ = ____ or ⊞ = ____ or ⊞ = ____ or ⊞ = ____ .

Clue 3

$-7=\cdots$

1000   Pif

Who is Pif? _____

32