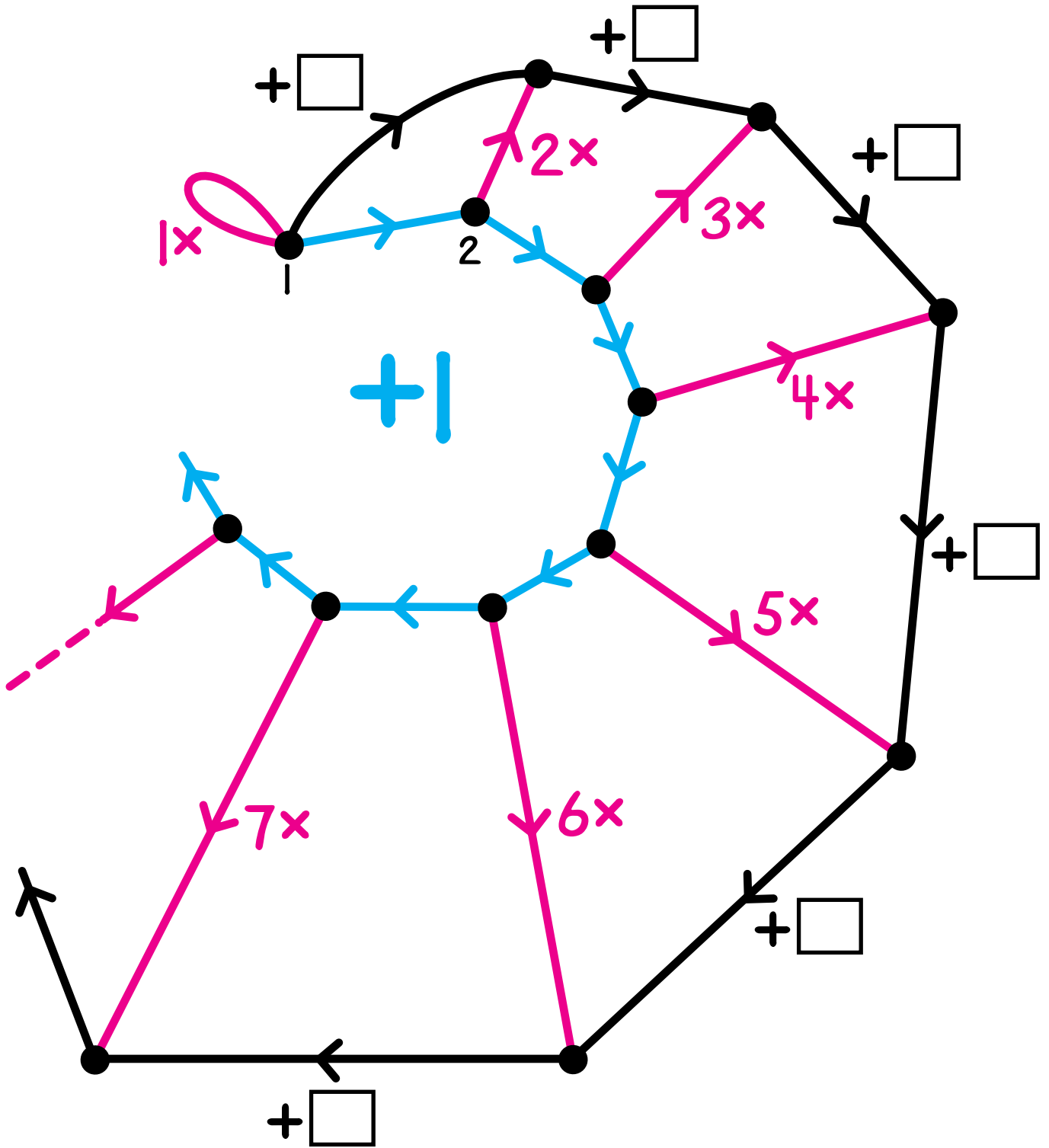Name _____

Selection
of
Problems #1

Label the dots and fill in the box for each black arrow.

2

Lam is a secret number.

Lam is one of these numbers.
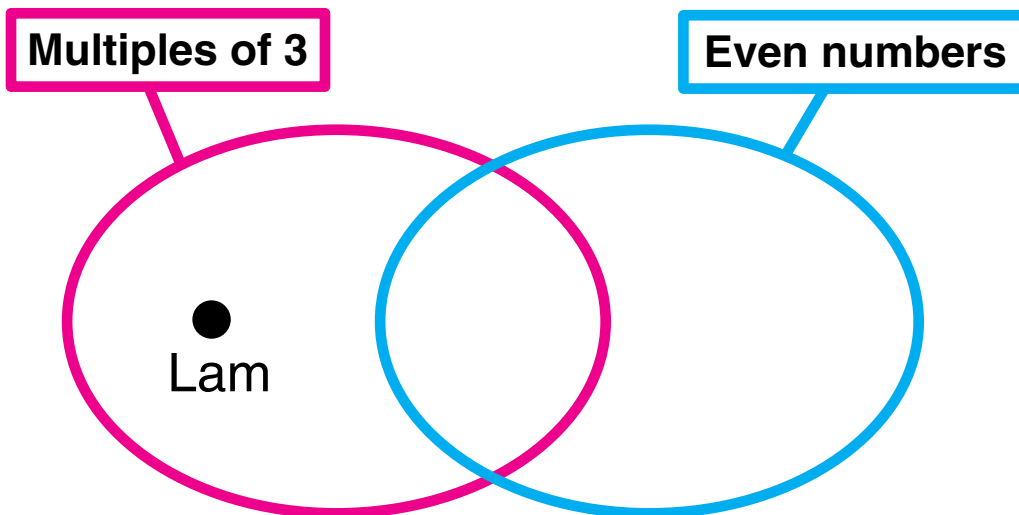
②
● = _____

● ⑥ = _____

⑤
● = _____

③ ● = _____
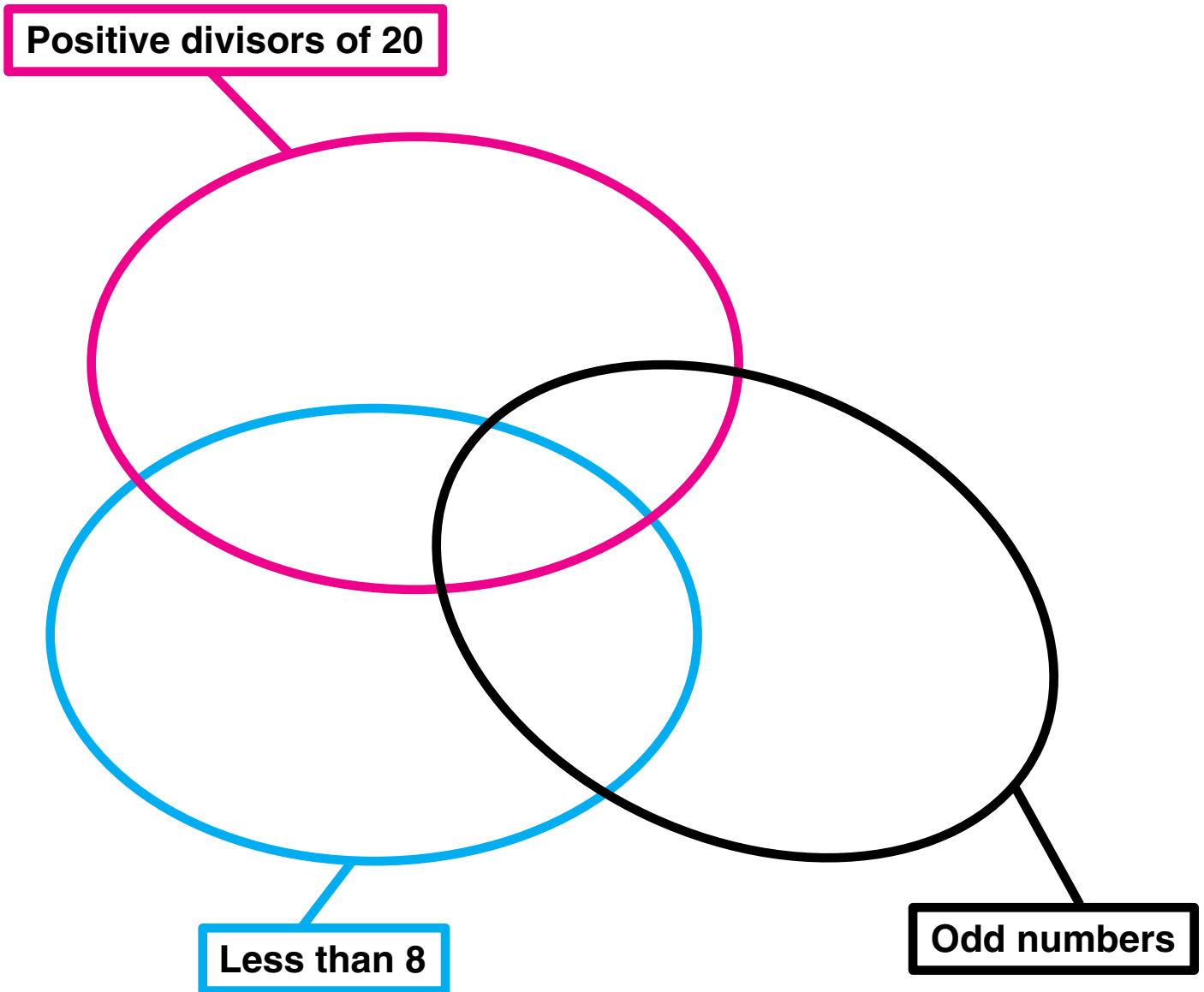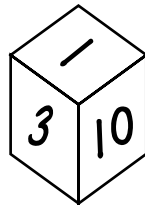
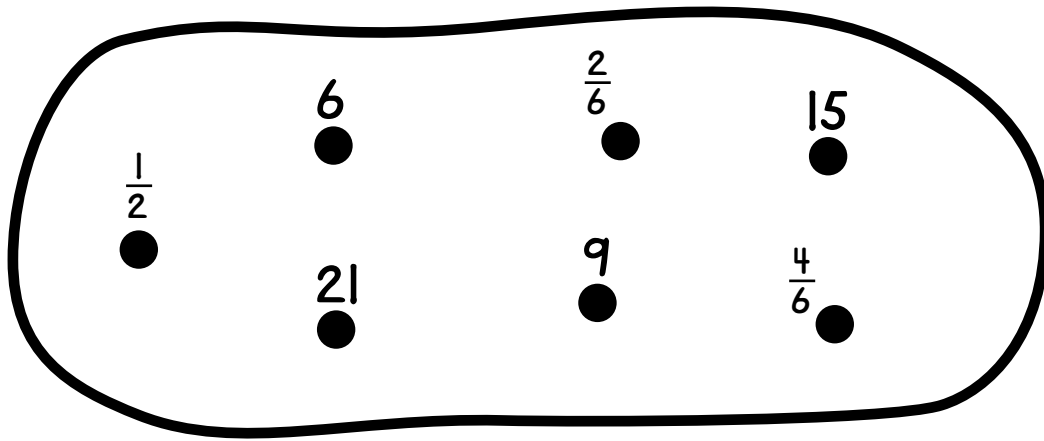**Multiples of 3**

Even numbers

●
Lam

Who is Lam? _____

3

Put these numbers in the string picture.

4   5   7   10   47   60

Positive divisors of 20

Less than 8

Odd numbers

Put these numbers in the blanks so that the story makes sense.

$\frac{1}{2}$ 6 $\frac{2}{6}$ 15   21   9 $\frac{4}{6}$

1   3   10

Alice and Bruce are playing a game tossing a number cube. The _____ faces of the cube are numbered in order 1, 3, 6, 10, _____, and _____.

Alice wins when an even number comes up, and Bruce wins when an odd number comes up. The probability that Alice wins is _____, and the probability that Bruce wins is _____.

Alice wants to change the game so that it is fair. She suggests that she wins when a number less than _____ comes up. Then the game is fair because her probability of winning is _____.
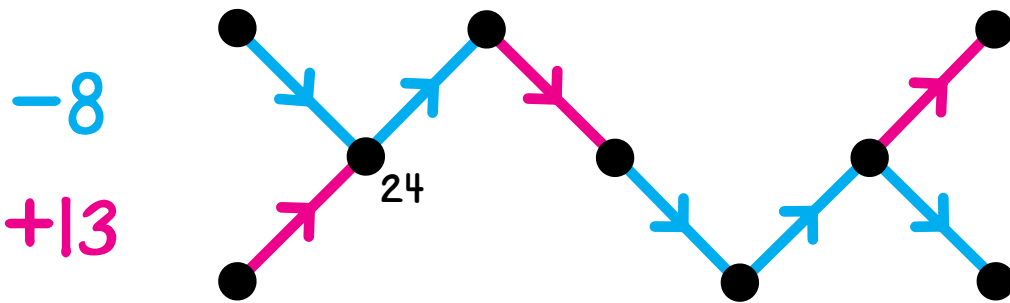
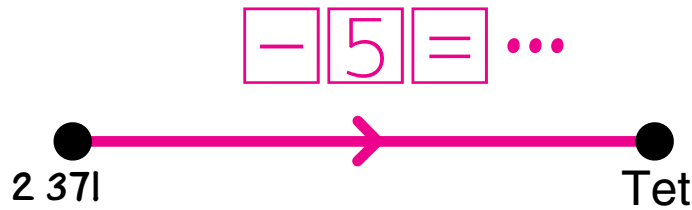Label the dots and fill in the box for the black arrows.

+☐

6×

+2
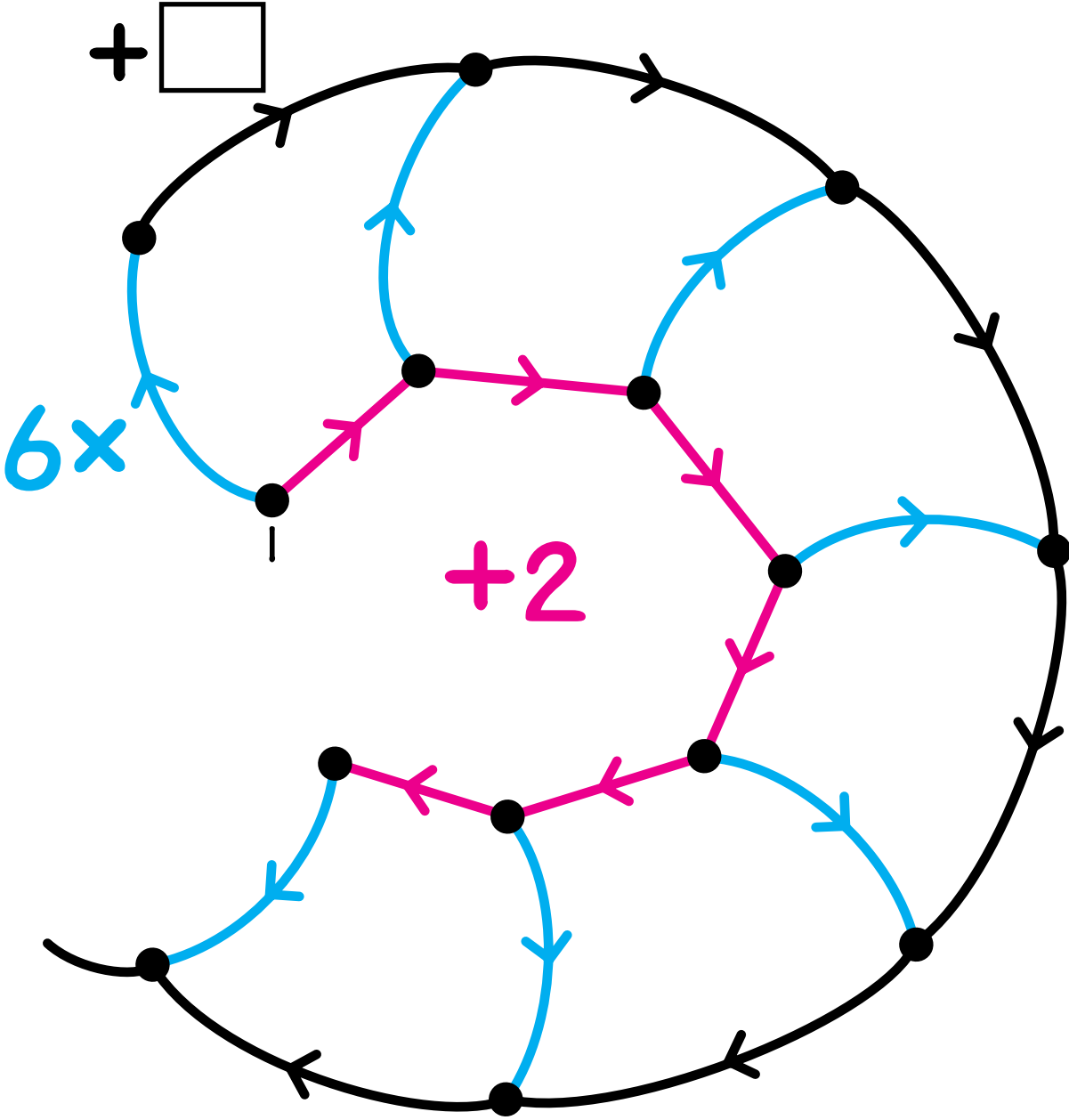
Tet is a secret number.
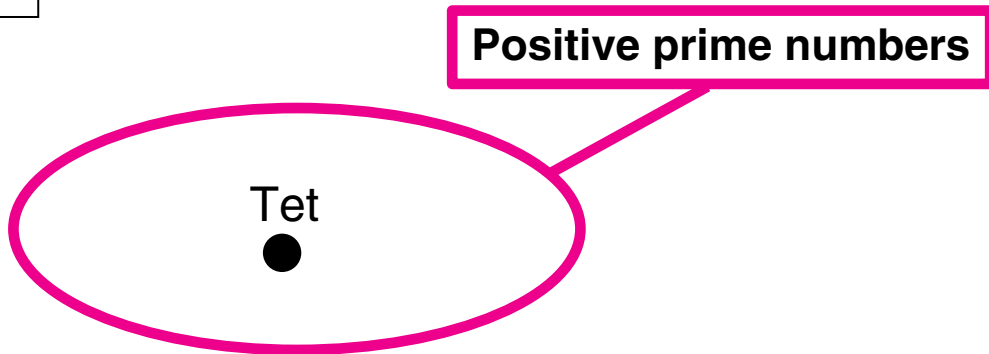
Clue 1

Tet is in this arrow picture. Label the dots.
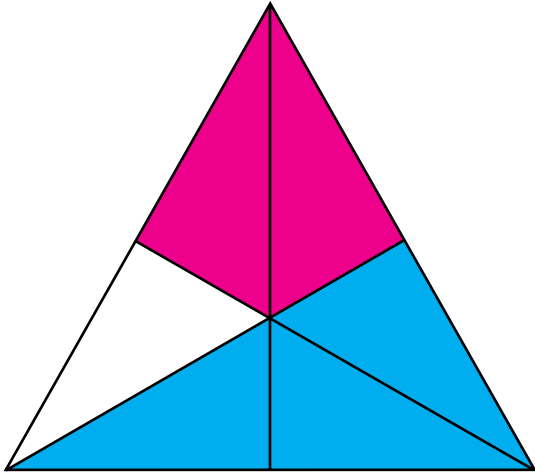
−8
+13

24

Clue 2

$-\boxed{5}\boxed{=}\cdots$

2 371 ————→ Tet

Tet could be _____, _____, _____, or _____.

Clue 3

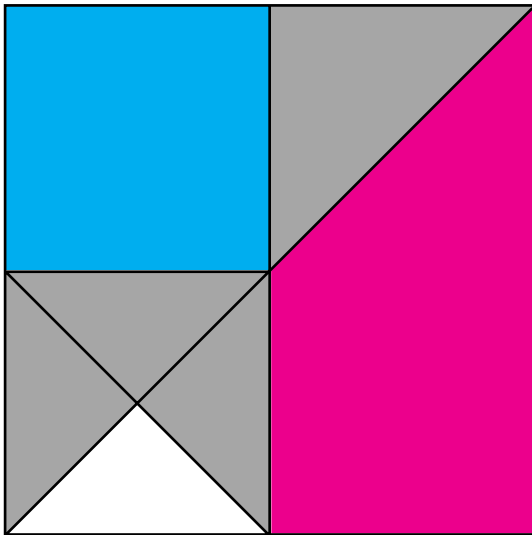**Positive prime numbers**

Tet

Who is Tet? _____

What fraction of the shape is colored each color?

Red _____

Blue _____

White _____

Red _____

Blue _____

Gray _____

White _____

Red _____

Blue _____

White _____

Label the dots on the zigzag number line with these numbers.
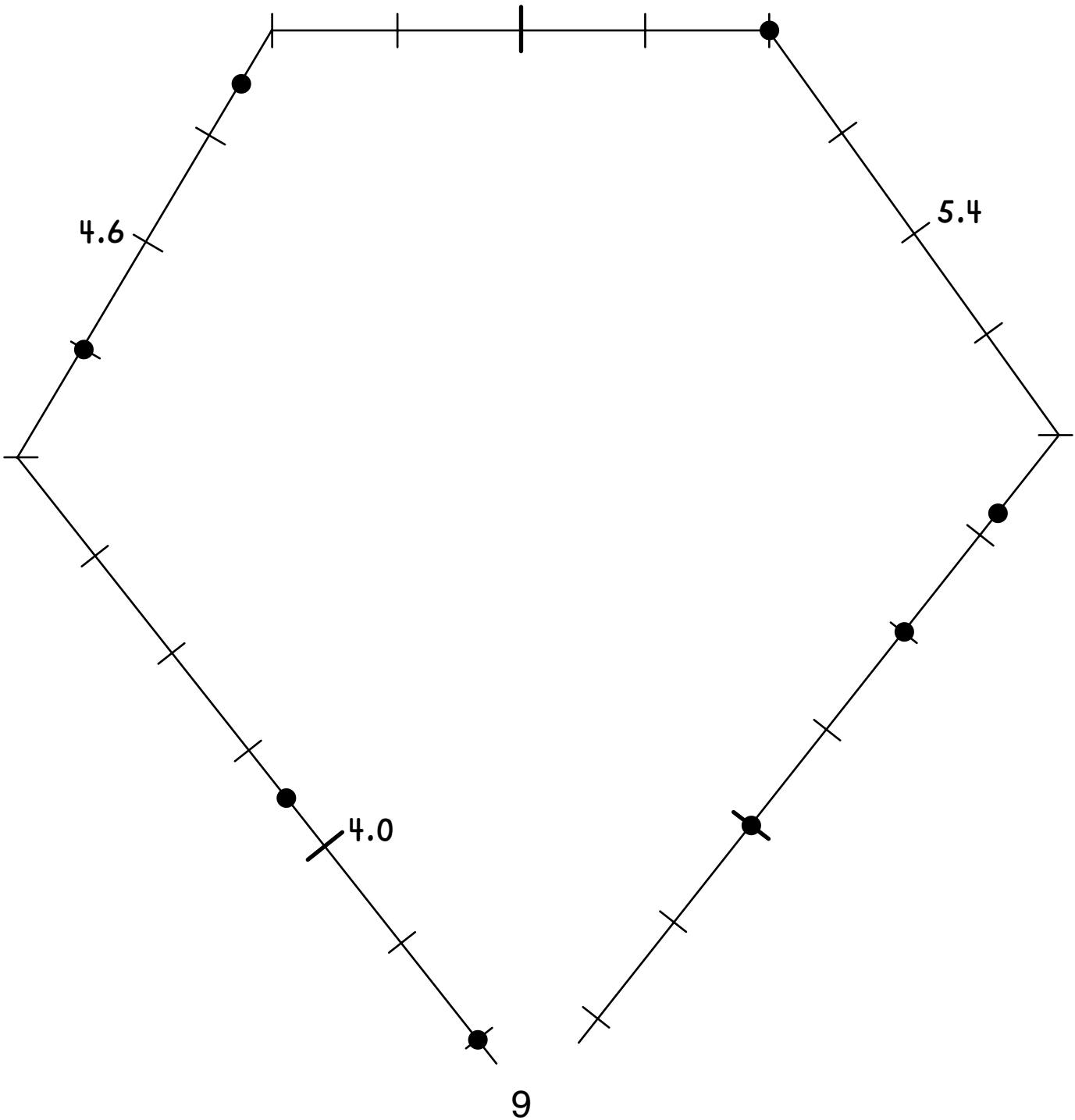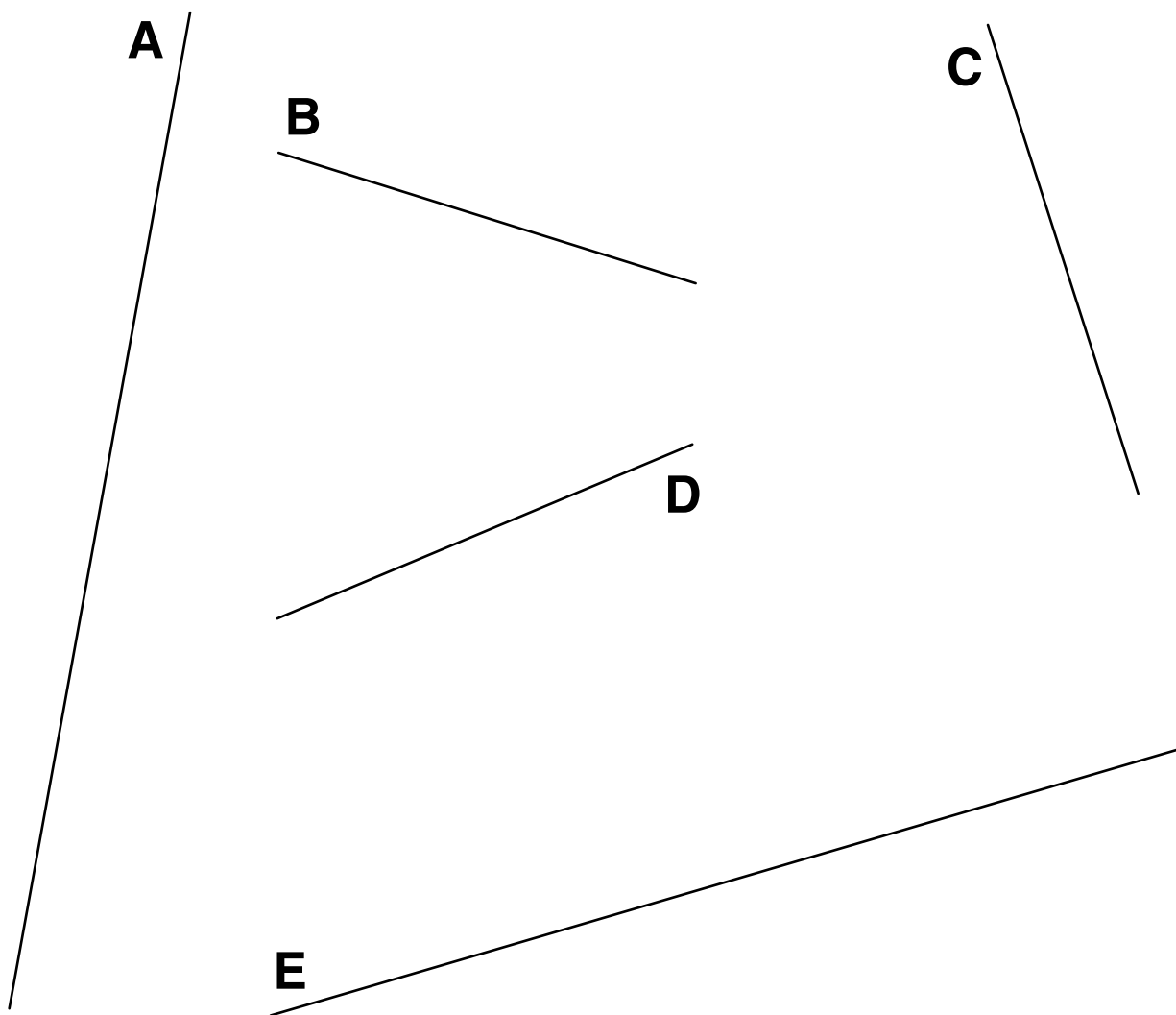
4.5   5.2   6   5.8
     3.8   4.75   4.05   5.67

A

B

C

D

E

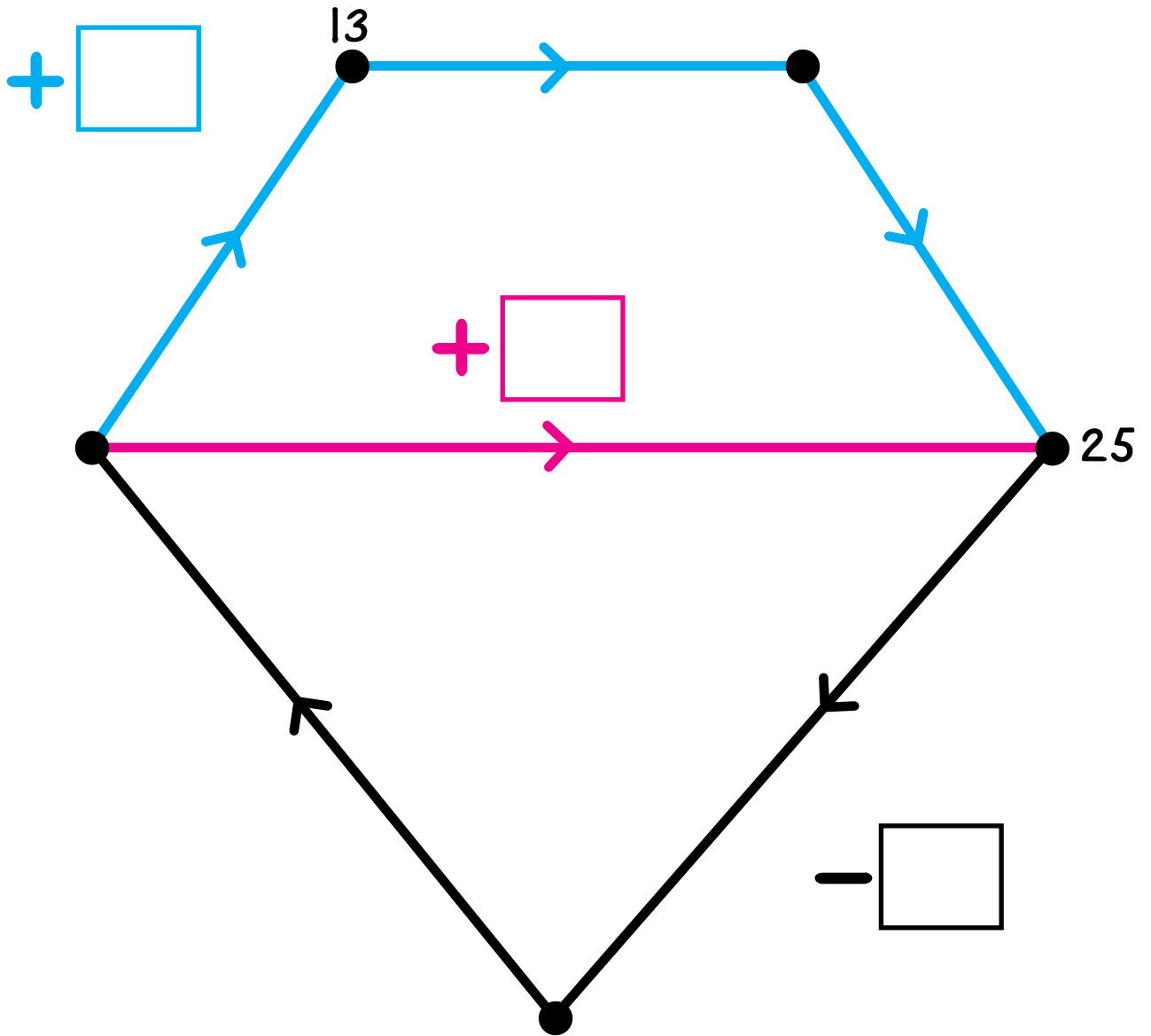Which line segment is closest to 6.4 cm long? _____

Which line segment is closest to 13.9 cm long? _____

What is the sum of the lengths of segments **B** and **C**? _____ cm

Which segment is longer, **A** or **E**? _____

How much longer is it? _____ cm

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

$+\ \square$

13

$+\ \square$

25

$-\ \square$

11

Jerome has 675 books to put on shelves. A full shelf holds 16 books. Use an arrow picture to find how many shelves Jerome can fill and how many books will be left over.
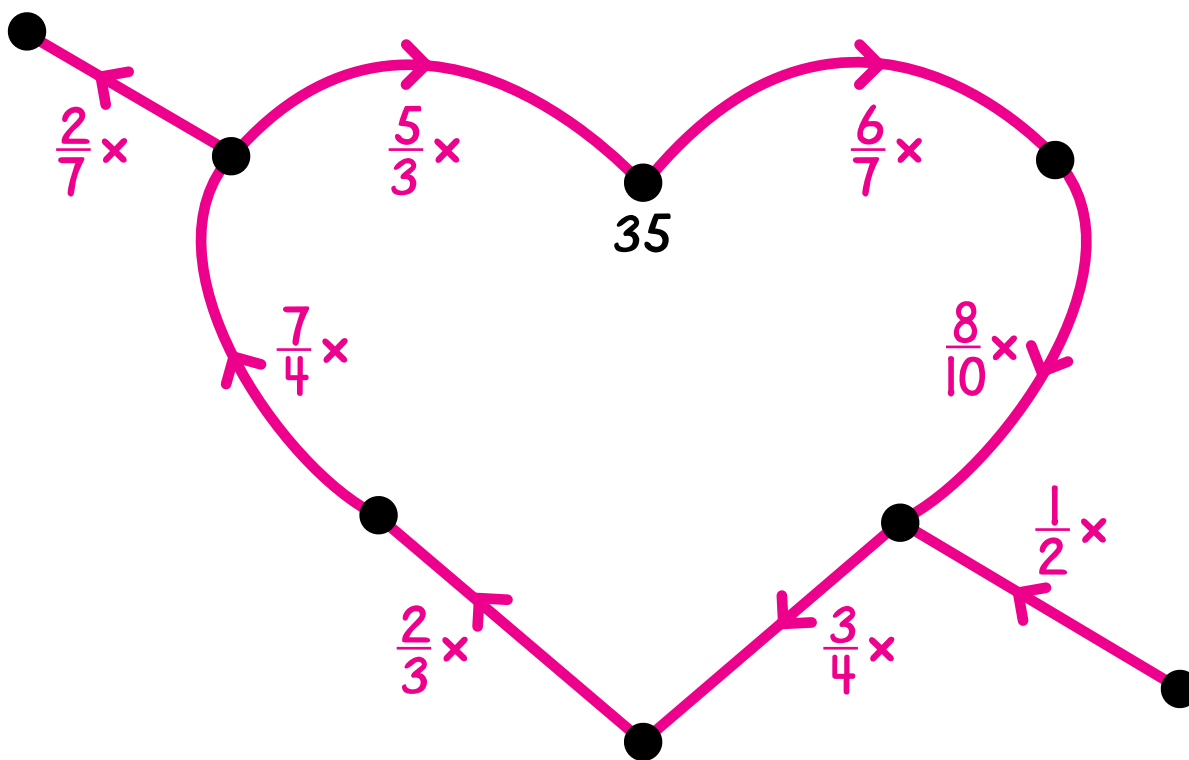
Complete.

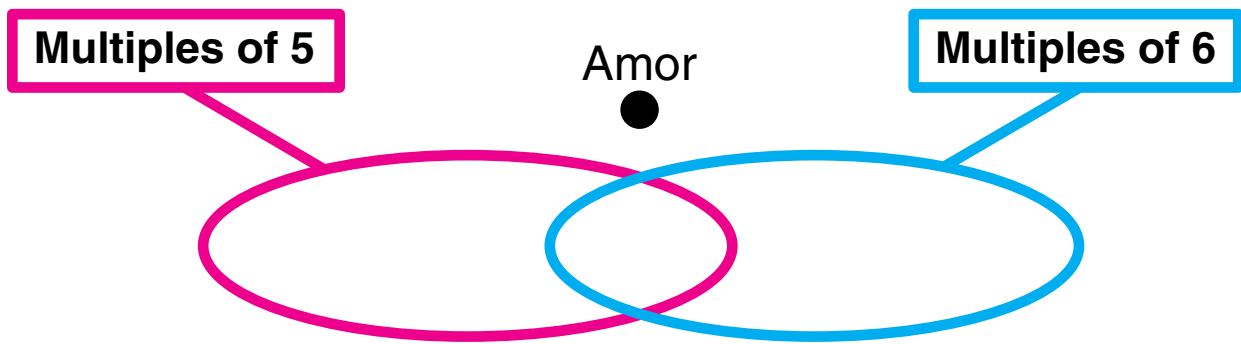$$\boxed{}\ \text{R=}\ \boxed{}$$

$$16\overline{)675}$$

Amor is a secret number.

Clue 1

Amor is in this arrow picture. Label the dots.

$\frac{2}{7}\times$ $\frac{5}{3}\times$ **35** $\frac{6}{7}\times$
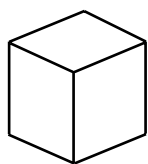
$\frac{7}{4}\times$ $\frac{8}{10}\times$

$\frac{2}{3}\times$ $\frac{3}{4}\times$ $\frac{1}{2}\times$

Clue 2

Multiples of 5   Amor   **Multiples of 6**

Who is Amor? _____

13

Flic   Mic

$\div 10$

Bic

Pic
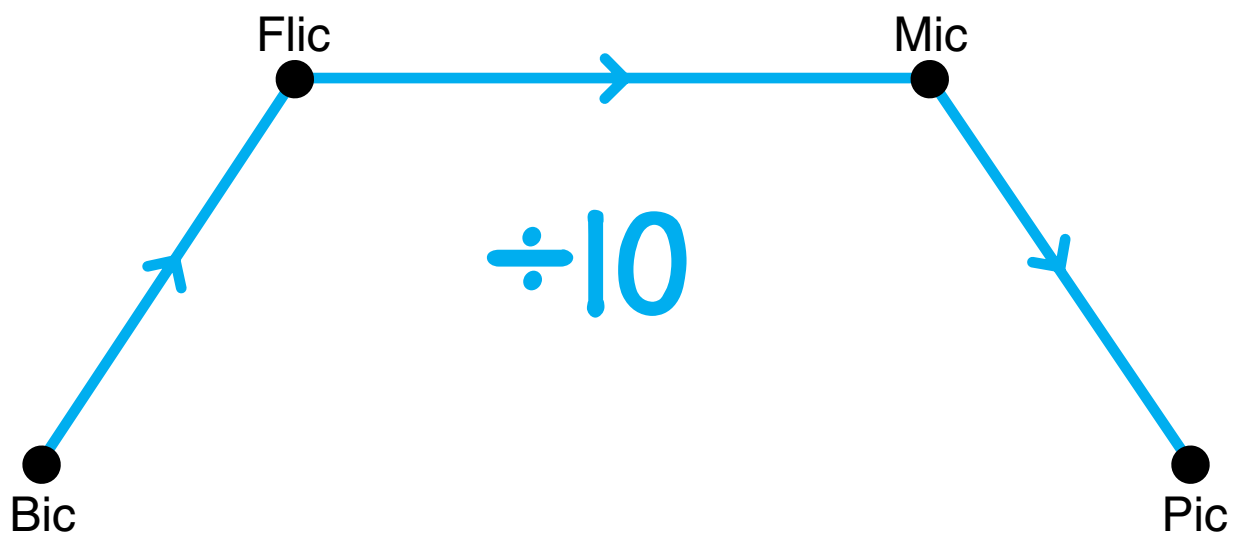
Complete the table.

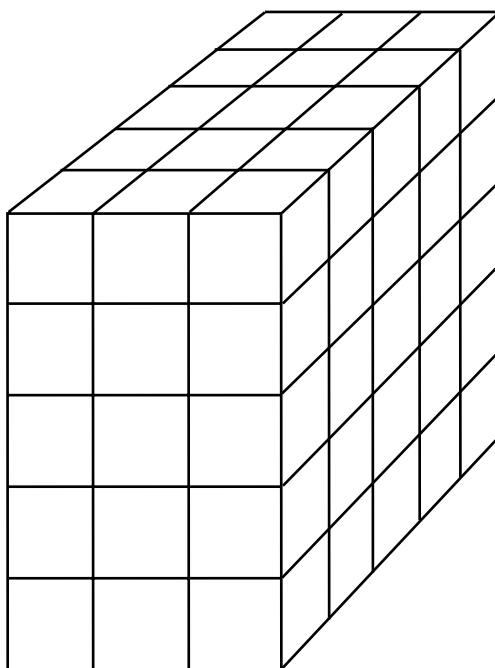| Bic	Flic	Mic	Pic
7 200			
3			
			60.3
		0.84	

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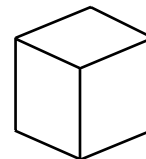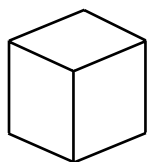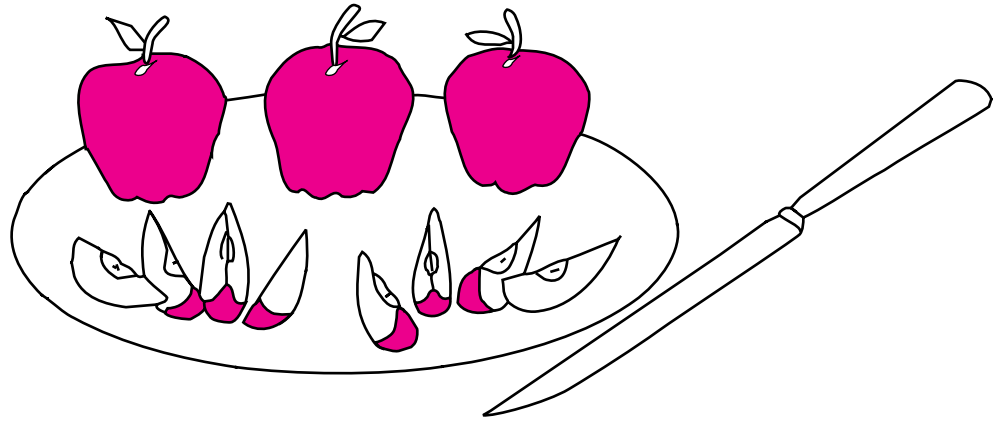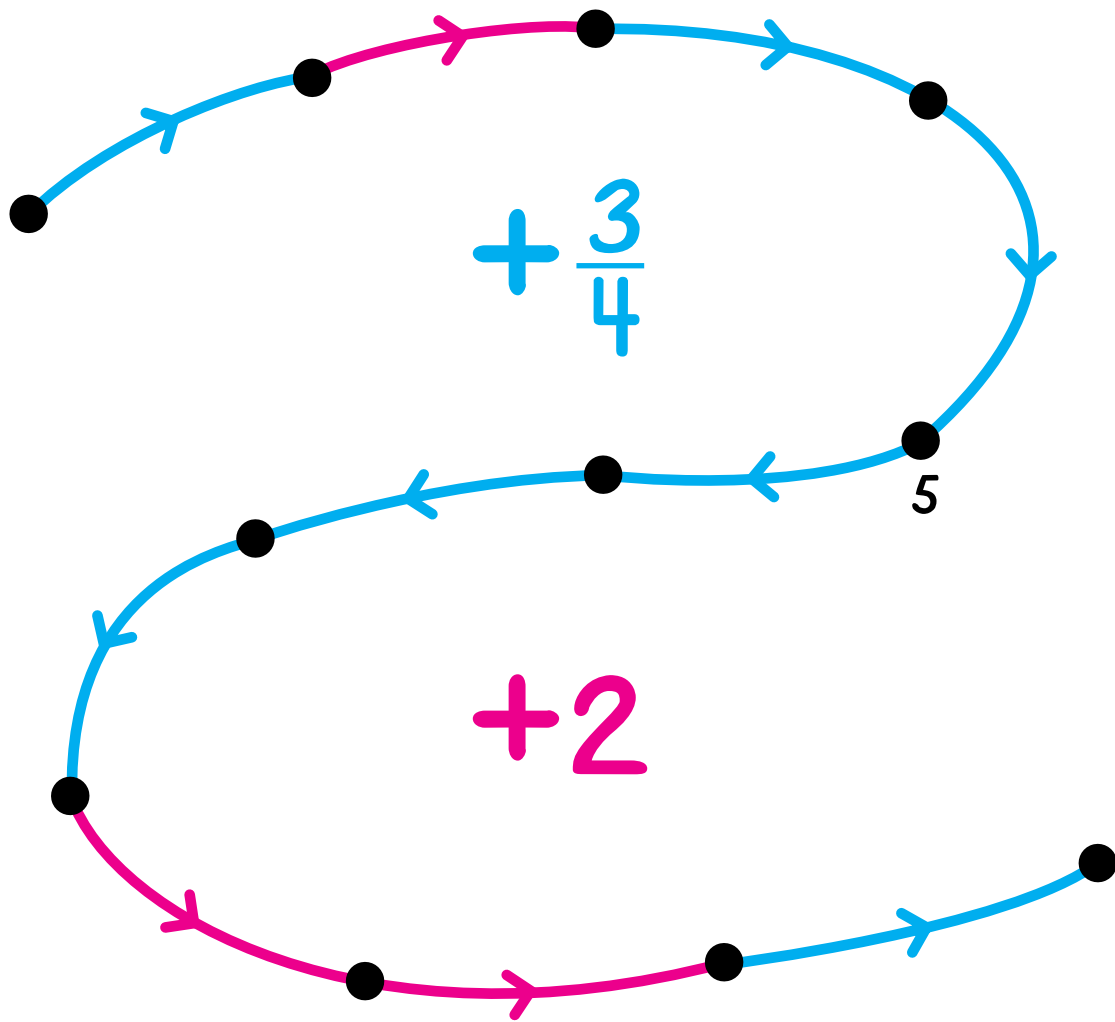
How many small cubes does it take to make this box?_____

How many small cubes does it take to make this box?_____

15

Label the dots.

$+\frac{3}{4}$

$+2$

5

Fill in the boxes to make the calculations correct.

$$
\begin{array}{r}
\square\,5\,9\,7 \\
8\,3\,\square \\
+\ 1\,6\,\square\,6 \\
\hline
7\,\square\,8\,5
\end{array}
$$

$$
\begin{array}{r}
\square\,3\,\square\,8 \\
-\ 3\,2\,9\,\square \\
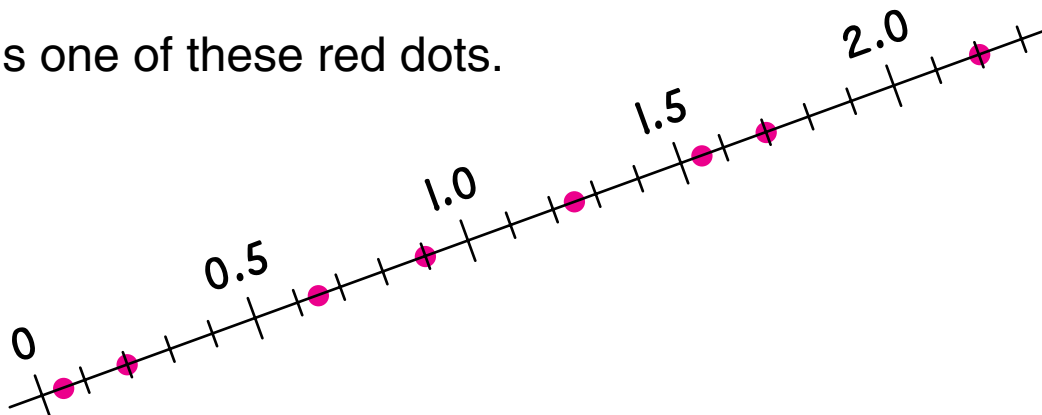\hline
4\,\square\,4\,2
\end{array}
$$

$$
\begin{array}{r}
7\,4 \\
\times\ \ \ \square \\
\hline
5\,\square\,2
\end{array}
$$

$5\square \div 2 = \square 7$
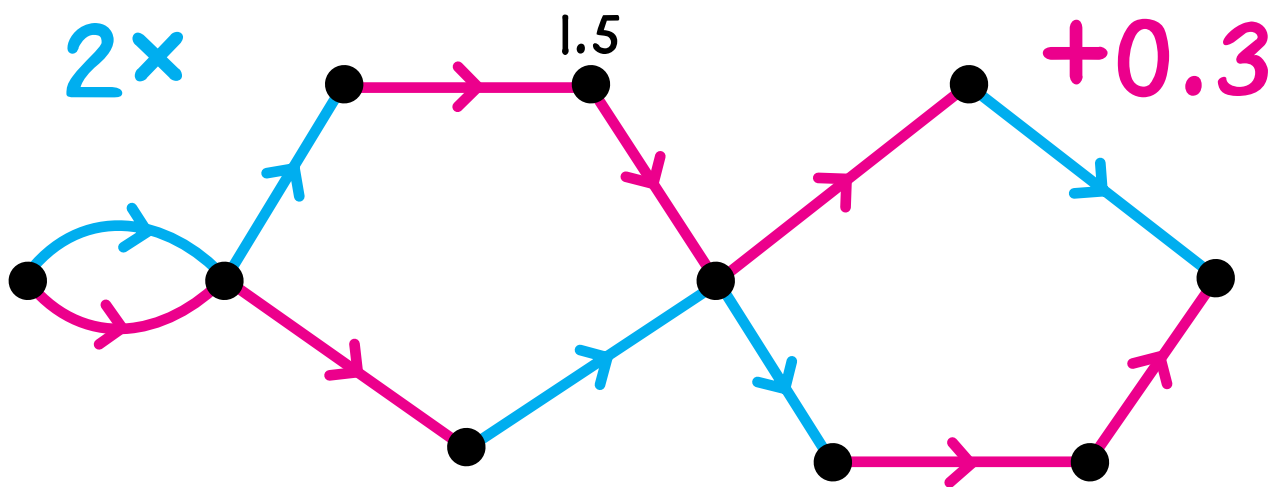
Nu is a secret number.

Clue 1

Nu is one of these red dots.

Nu could be _____, _____, _____, _____, _____, _____, _____, or _____.

Clue 2

Nu is in this arrow picture. Label the dots.

2×   1.5   +0.3

Who is Nu? _____

Fill in the blanks on the left.
By moving exactly one checker, put the new number on the Minicomputer to the right.

= ____   = 32
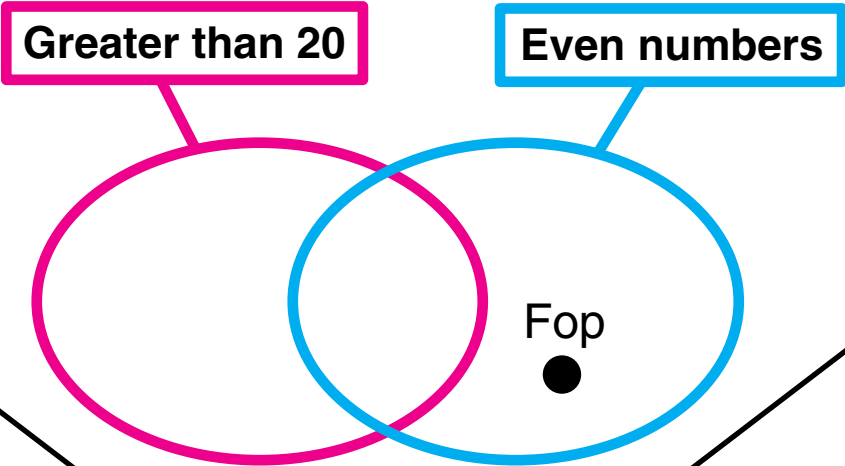

= ____   = 21

= ____   = 100

= ____   = 12

= ____   = 100

Fop is in this string picture.

Greater than 20

Even numbers
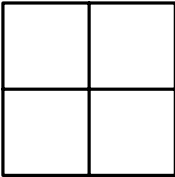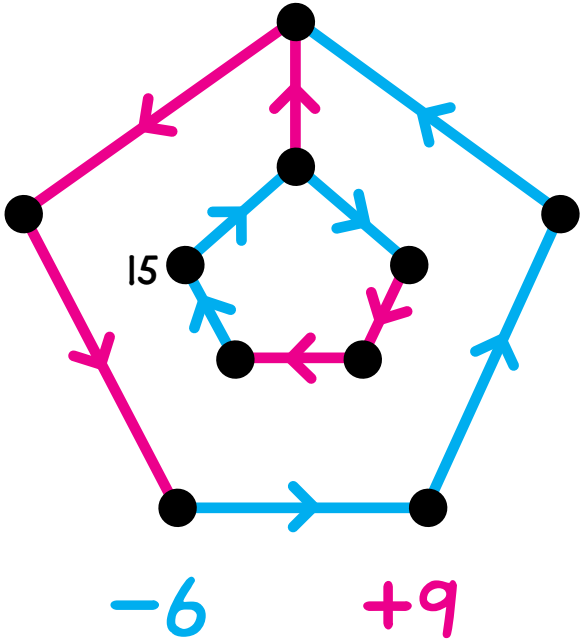
Fop

Fop can be put on the ones board of the Minicomputer using exactly one ③-checker.

Fop is in this arrow picture.

15

−6   +9

Who is Fop? _____

The red label is one of these:

Multiples of 2
Multiples of 3
Multiples of 4
Positive prime numbers
Less than 50
Greater than $\widehat{10}$
Positive divisors of 12
Positive divisors of 20
Positive divisors of 24
Positive divisors of 27

The blue label is one of these:

Multiples of 2
Multiples of 3
Multiples of 4
Positive prime numbers
Less than 50
Greater than $\widehat{10}$
Positive divisors of 12
Positive divisors of 20
Positive divisors of 24
Positive divisors of 27

Label the strings.

2 •   8 •

21
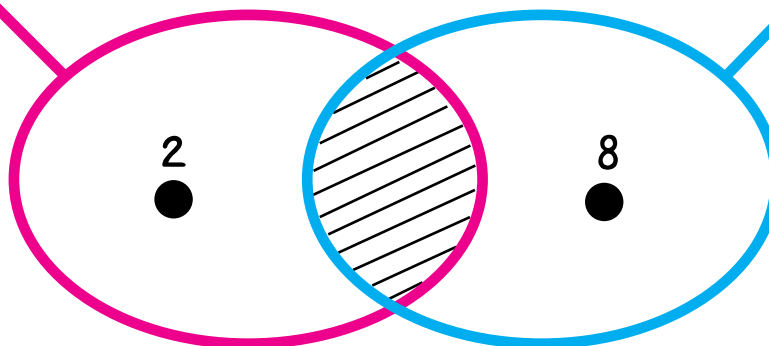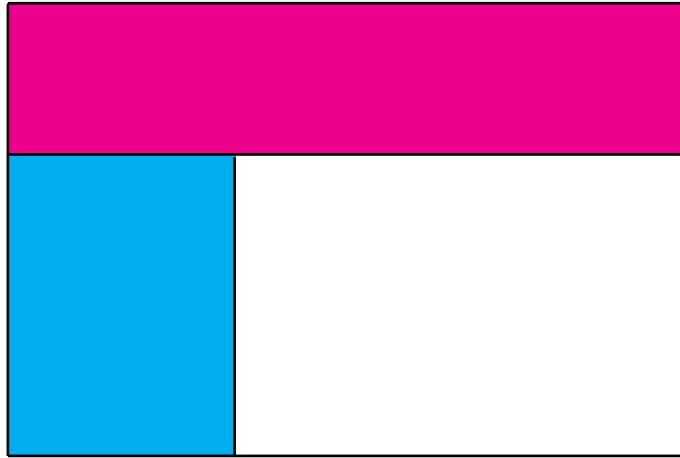
What fraction of this shape is:

     red?   _____
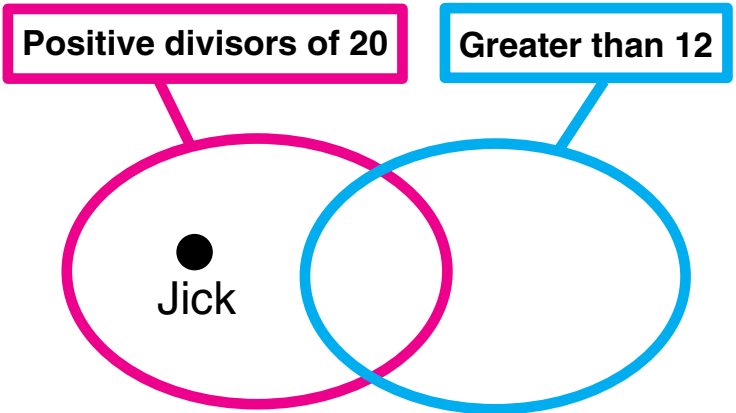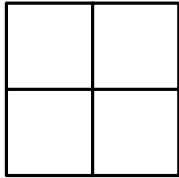
     blue?   _____

     white?   _____

A farmer divides his land among his three children. Brian receives $\frac{2}{5}$ of the farm, Lilian receives $\frac{1}{2}$ of the farm, and Alicia receives the rest.

Color $\frac{2}{5}$ of this rectangle red for Brian's share; color $\frac{1}{2}$ of it blue for Lilian's share. Use a ruler to accurately divide the rectangle.
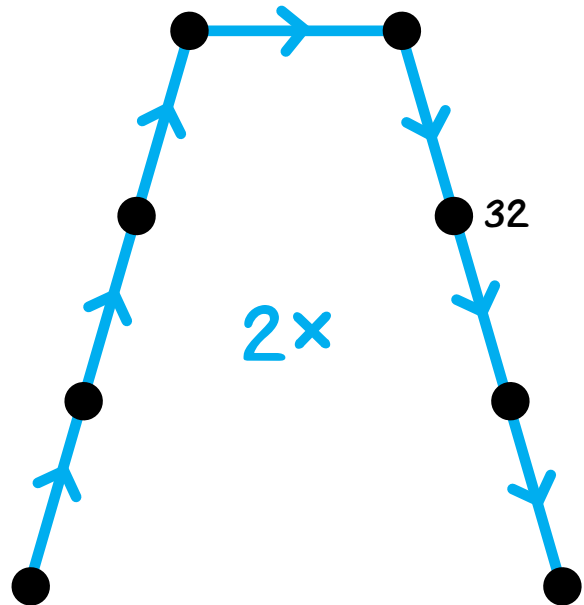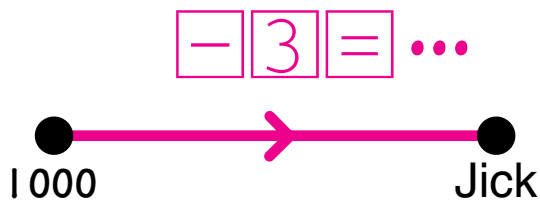

What fraction of the farm does Alicia receive? _____

22

Jick can be put on the ones board of the Minicomputer with exactly two regular positive checkers.
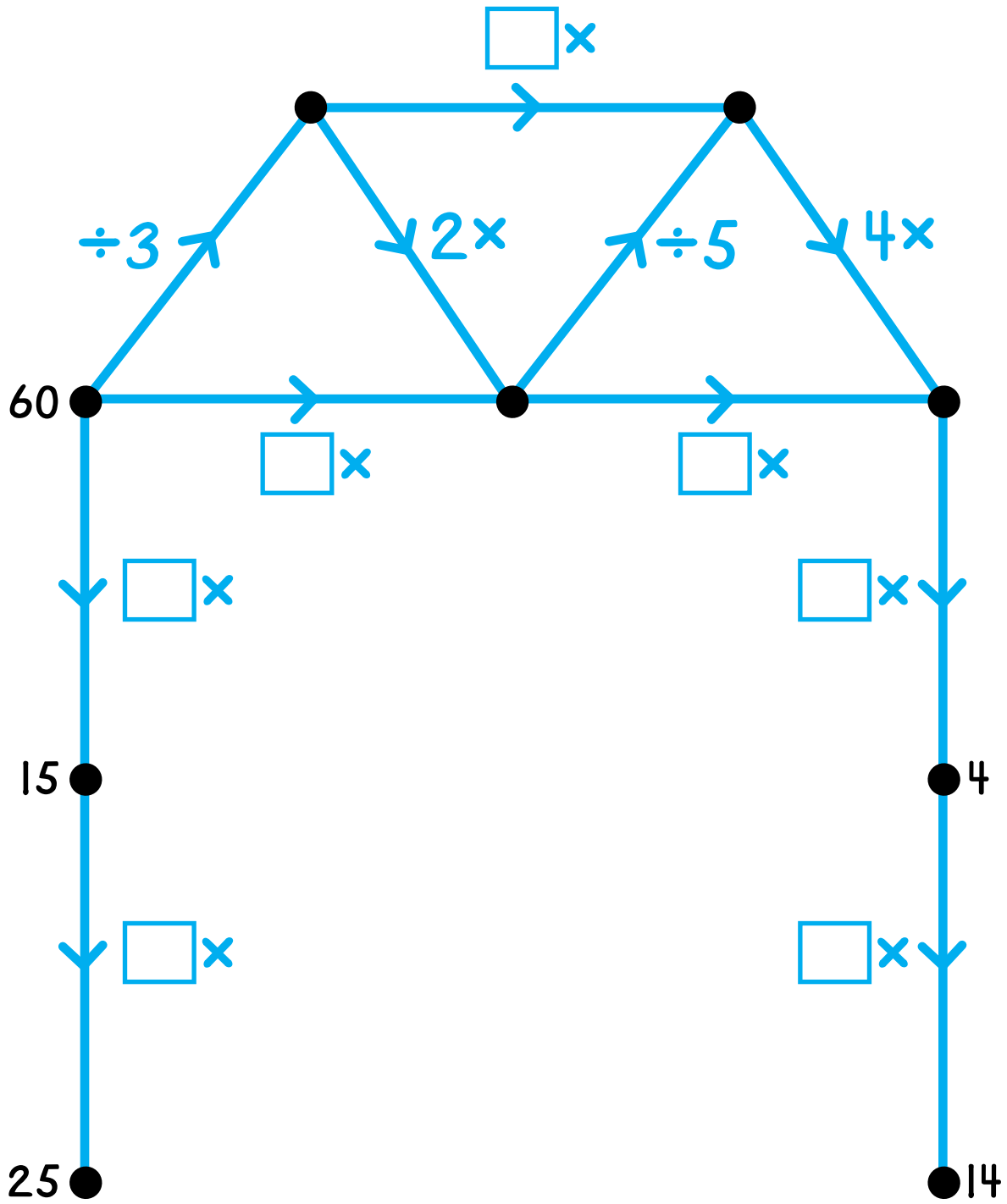
Positive divisors of 20   Greater than 12

• Jick

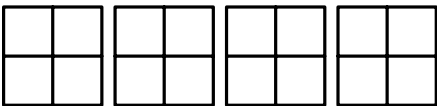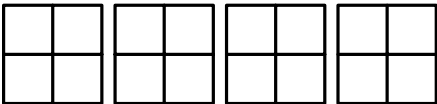Jick is in this arrow picture.

2×

32

− 3 = •••

I 000 ——→ Jick

Who is Jick? _____

23
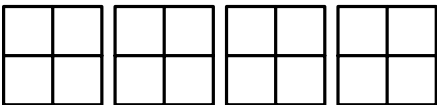
Label the dots.
Fill in the boxes for the blue arrows.

$\square$×

÷3

2×

÷5

4×

60

$\square$×

$\square$×

$\square$×

$\square$×

15

4

$\square$×

$\square$×
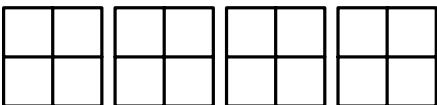
25

14

Using only regular checkers, put these numbers on the Minicomputer.
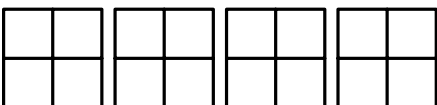
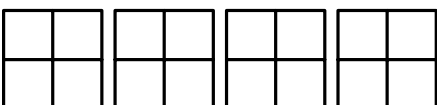Use exactly two checkers: ⊞⊞⊞⊞ = ___16

Use exactly four checkers: ⊞⊞⊞⊞ = ___176

Use exactly six checkers: ⊞⊞⊞⊞ = __1776

Use exactly eight checkers: ⊞⊞⊞⊞ = 17776

Use exactly three checkers: ⊞⊞⊞⊞ = ___36

Use exactly five checkers: ⊞⊞⊞⊞ = __376

Use exactly seven checkers: ⊞⊞⊞⊞ = 3776

25

What are the ten smallest SQUARE numbers? ____, ____, ____,

____, ____, ____, ____, ____, ____, ____.

Each red arrow is for plus some SQUARE number. Label the arrows and the dots in these arrow roads. The first road is done for you.

+4   +4   8   +9

0   4   17

0   41

0   46

0   70

0   74

26
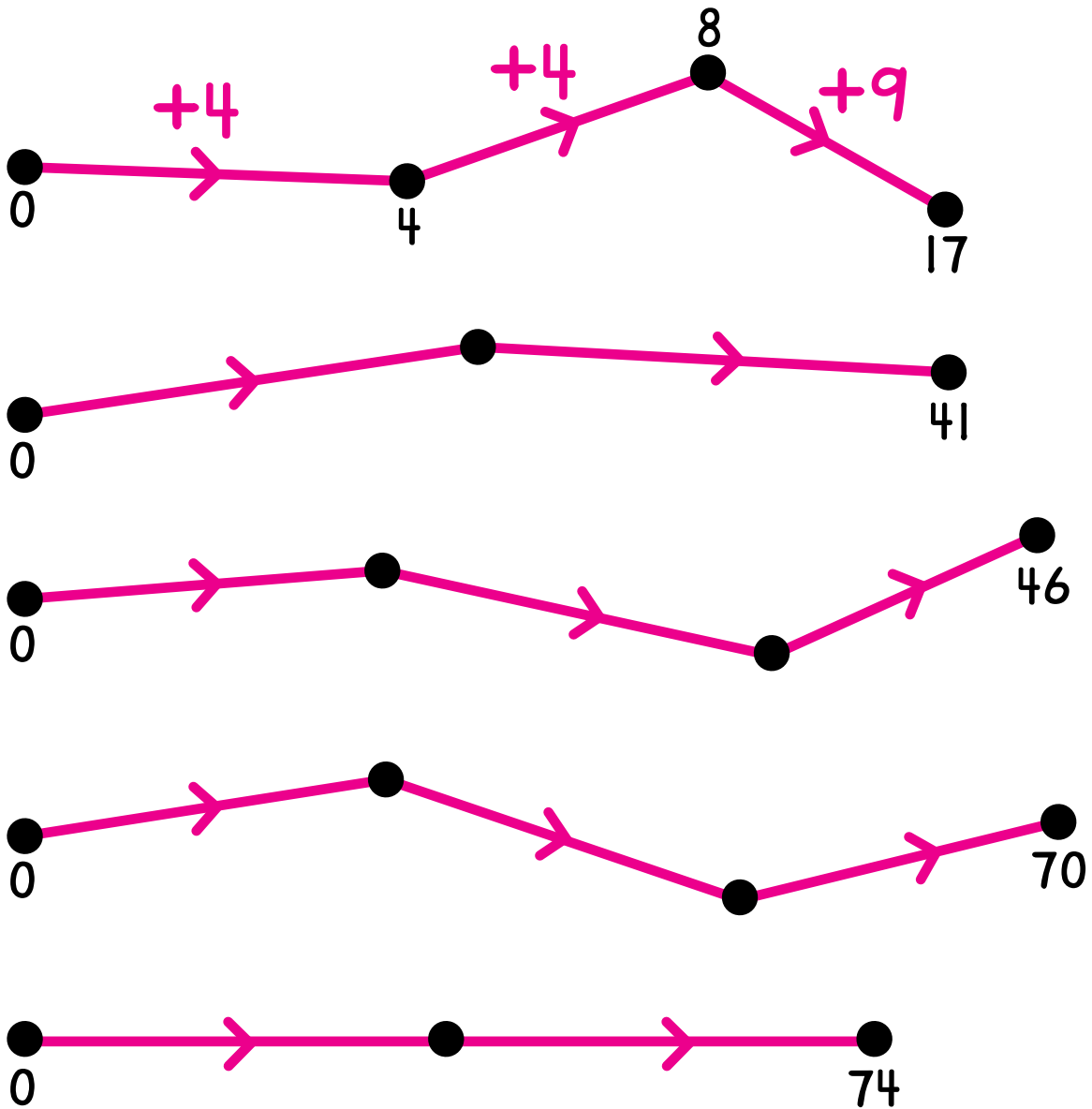
There are 50 states in the United States.

Exactly 16 states are east of the Mississippi River and border an ocean or the Gulf of Mexico.

Exactly 23 states border on an ocean or on the Gulf of Mexico.

Exactly 26 states are east of the Mississippi River.

States in the United States

States west of the Mississippi River

States that border an ocean or the Gulf of Mexico

☐

☐ ☐ ☐
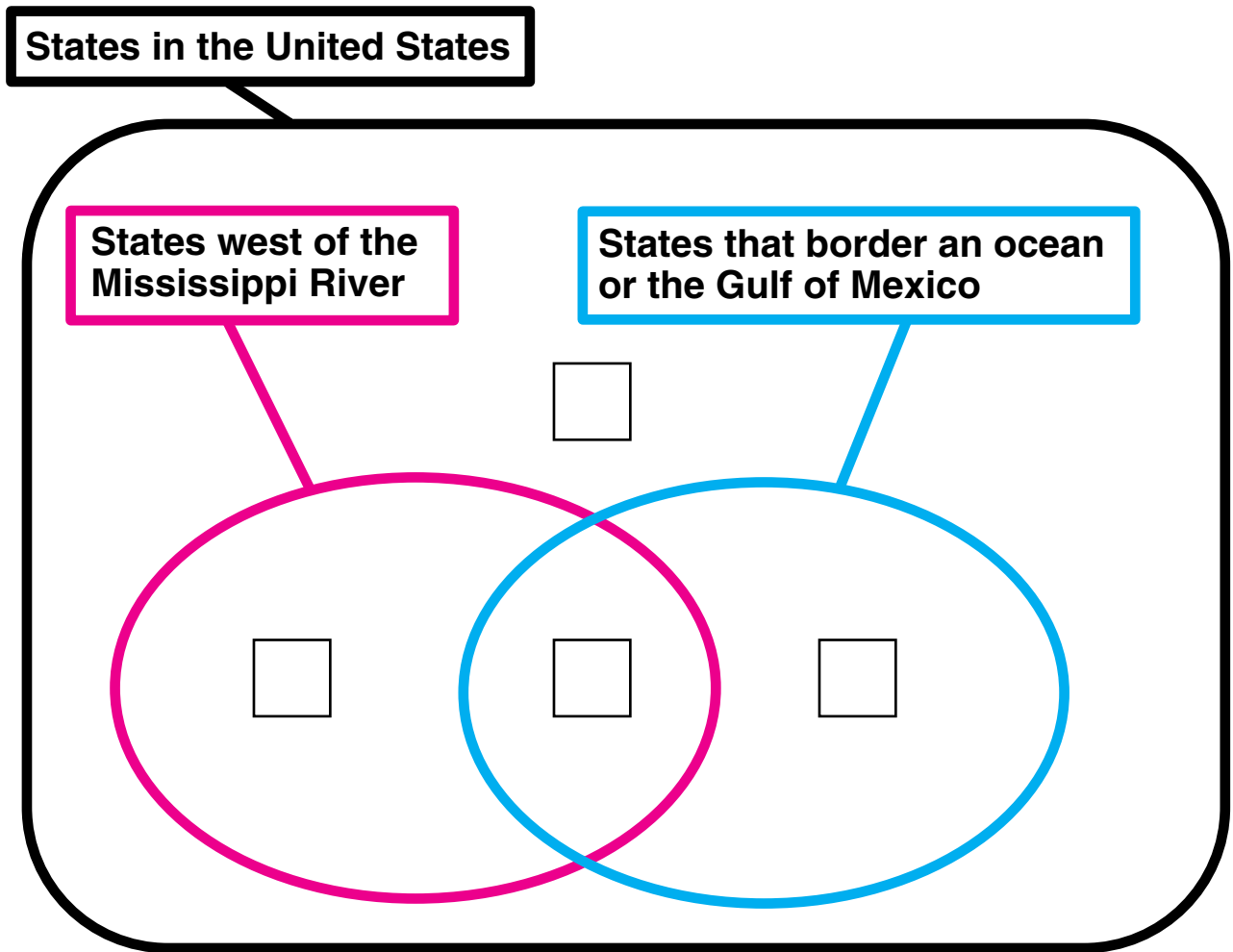
Put these states in the string picture:

California   Florida   Colorado   Kentucky

Using the clues given above, write the number of states in each region.

27

$$\boxed{3} \quad \boxed{1} \quad \boxed{4} \quad \boxed{2}$$

What is the least four-digit number with these four digits? _____

What is the greatest four-digit number with these four digits? _____

List all of the four-digit numbers with these four digits.
(There may be extra blanks.)

_____, _____, _____, _____, _____, _____, _____,

_____, _____, _____, _____, _____, _____, _____,

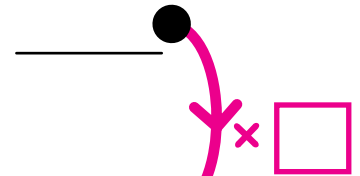_____, _____, _____, _____, _____, _____, _____,

_____, _____, _____, _____, _____, _____, _____,

How many four-digit numbers did you list? _____
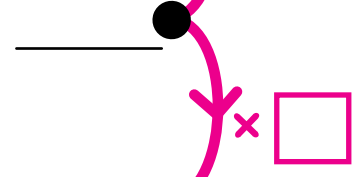
Fill in the blanks and the box for each red arrow.

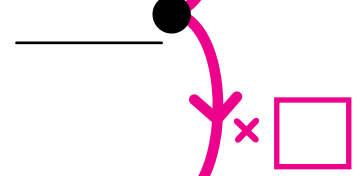How many one-digit numbers are there using this digit exactly once? 9 _____ ●

×□

How many two-digit numbers are there using each of these digits exactly once? 8 9 _____ ●
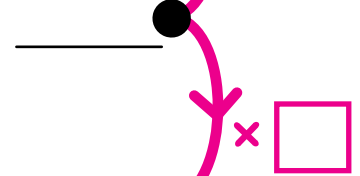
×□

How many three-digit numbers are there using each of these digits exactly once? 7 8 9 _____ ●
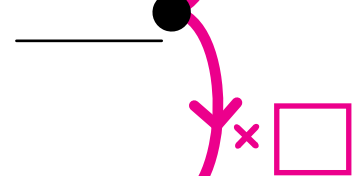
×□

How many four-digit numbers are there using each of these digits exactly once? 6 7 8 9 _____ ●

×□

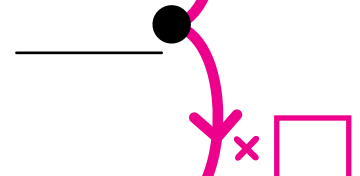How many five-digit numbers are there using each of these digits exactly once? 5 6 7 8 9 _____ ●

×□

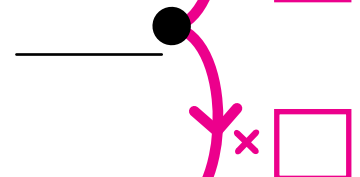How many six-digit numbers are there using each of these digits exactly once? 4 5 6 7 8 9 _____ ●

×□

How many seven-digit numbers are there using each of these digits exactly once? 3 4 5 6 7 8 9 _____ ●
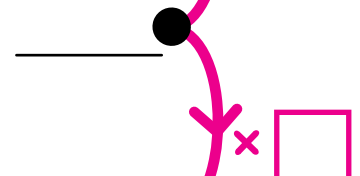
×□

How many eight-digit numbers are there using each of these digits exactly once? 2 3 4 5 6 7 8 9 _____ ●

×□

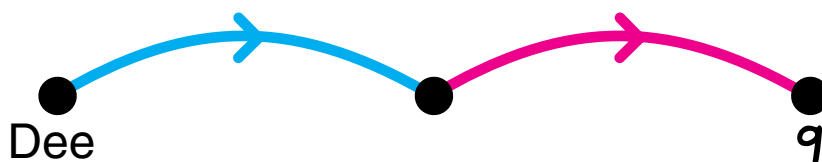How many nine-digit numbers are there using each of these digits exactly once? 1 2 3 4 5 6 7 8 9 _____ ●

29

Dee is a secret number.

The blue arrow
could be for:

| 10× |
| ÷2 |
| −3 |

The red arrow
could be for:

| 10× |
| ÷2 |
| −3 |

Dee   9

Dee could be _____, _____, _____, _____, _____, _____,
_____, or _____.
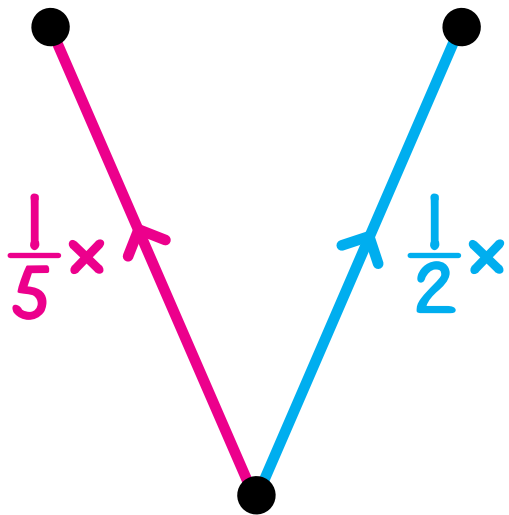
$+\ 0.5\ = \cdots$

−70.2 ●————————————→——————● Dee

Who is Dee? _____

30

Label the dots.

2 is the smallest number in this arrow picture.

$\frac{1}{5}\times$ $\frac{1}{2}\times$

8 is the smallest number in this arrow picture.

$\frac{3}{4}\times$ $\frac{2}{4}\times$
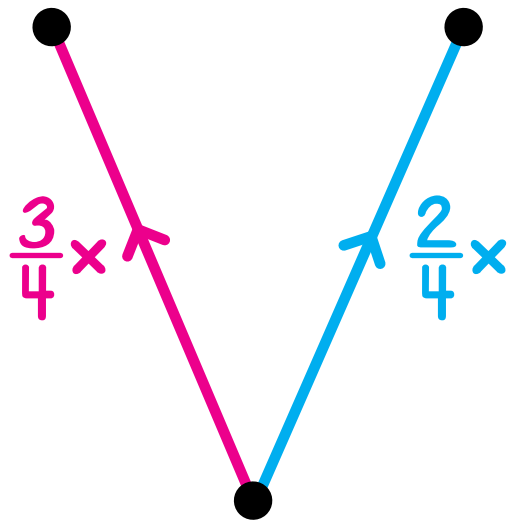
12 is the smallest number in this arrow picture.

$\frac{5}{3}\times$ $\frac{5}{4}\times$
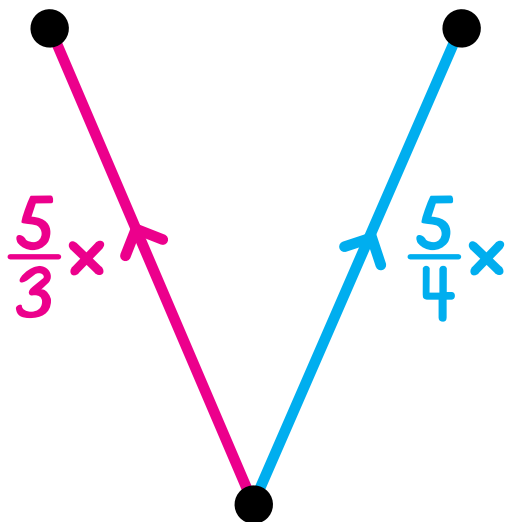
4 is the smallest number in this arrow picture.

$\frac{3}{2}\times$ $\frac{1}{7}\times$

31
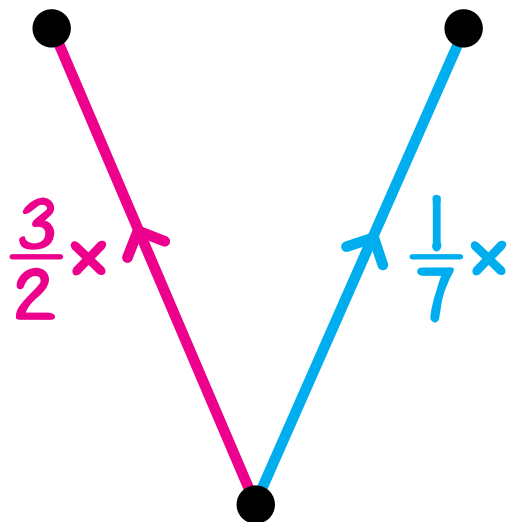
Mo and Lo are whole numbers.

Positive divisors of 18

Less than 10

Mo

Lo

$+\ 4\ =\ \cdots$

1 •———————→• Lo

Lo   Mo

$+||$ $+4$

Who is Mo? _____

Who is Lo? _____

32