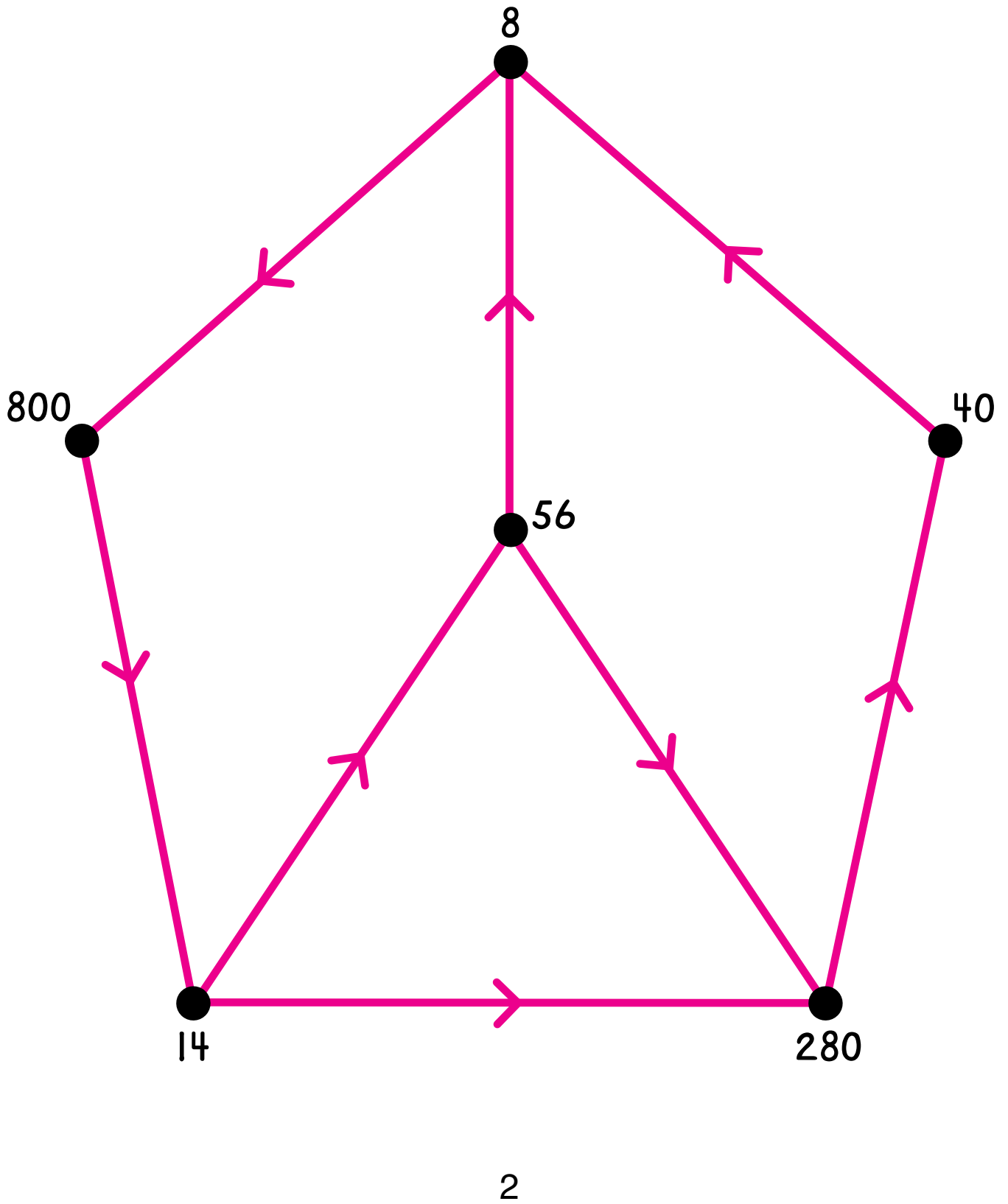Name _____

Collage
of
Problems #1

Label the red arrows; try to label some arrows in two ways.

Build an arrow road from 9 to 119. Each arrow must be for **+**, **−**, **×**, or **÷** a one-digit whole number. Use as few arrows as you can.
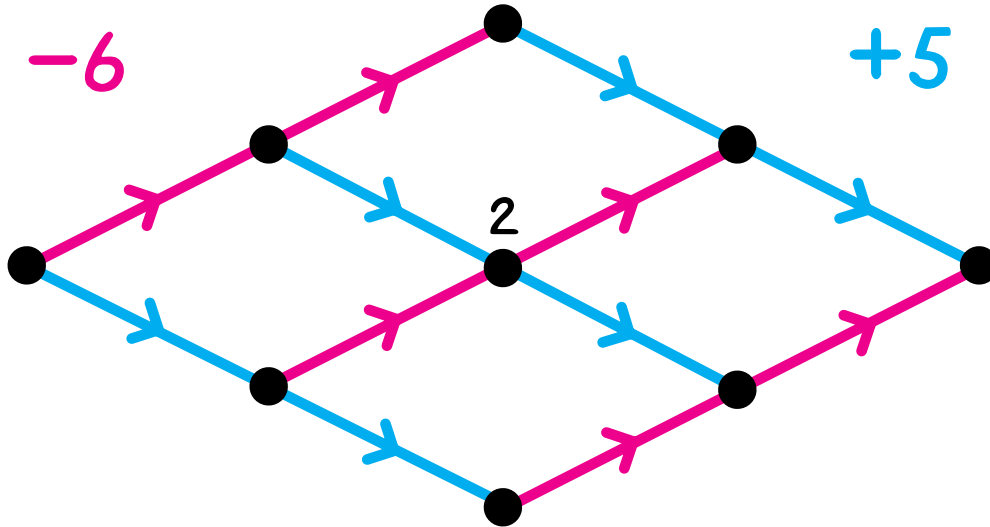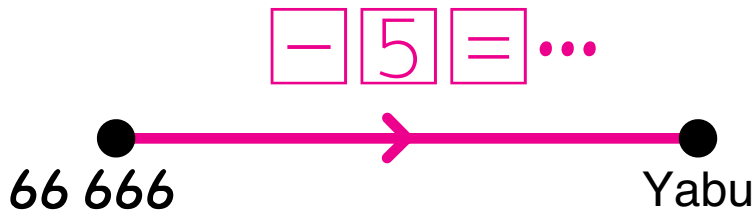
9
●

●
119

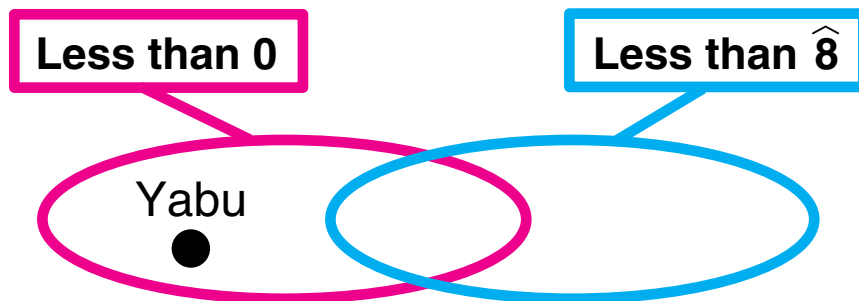Yabu is a secret number.

Clue 1

Yabu is in this arrow picture.

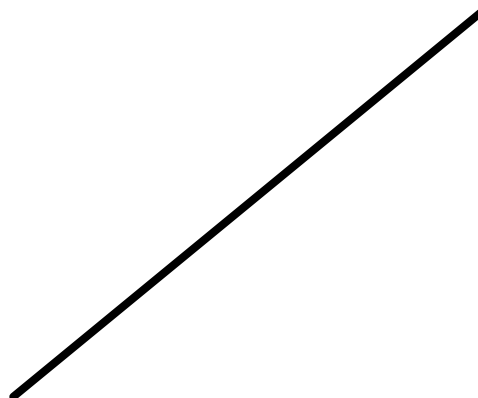−6 +5

2

Clue 2

□ − 5 □ = □ ...

66 666 ——→ Yabu

Yabu could be _____, _____, or _____.

Clue 3

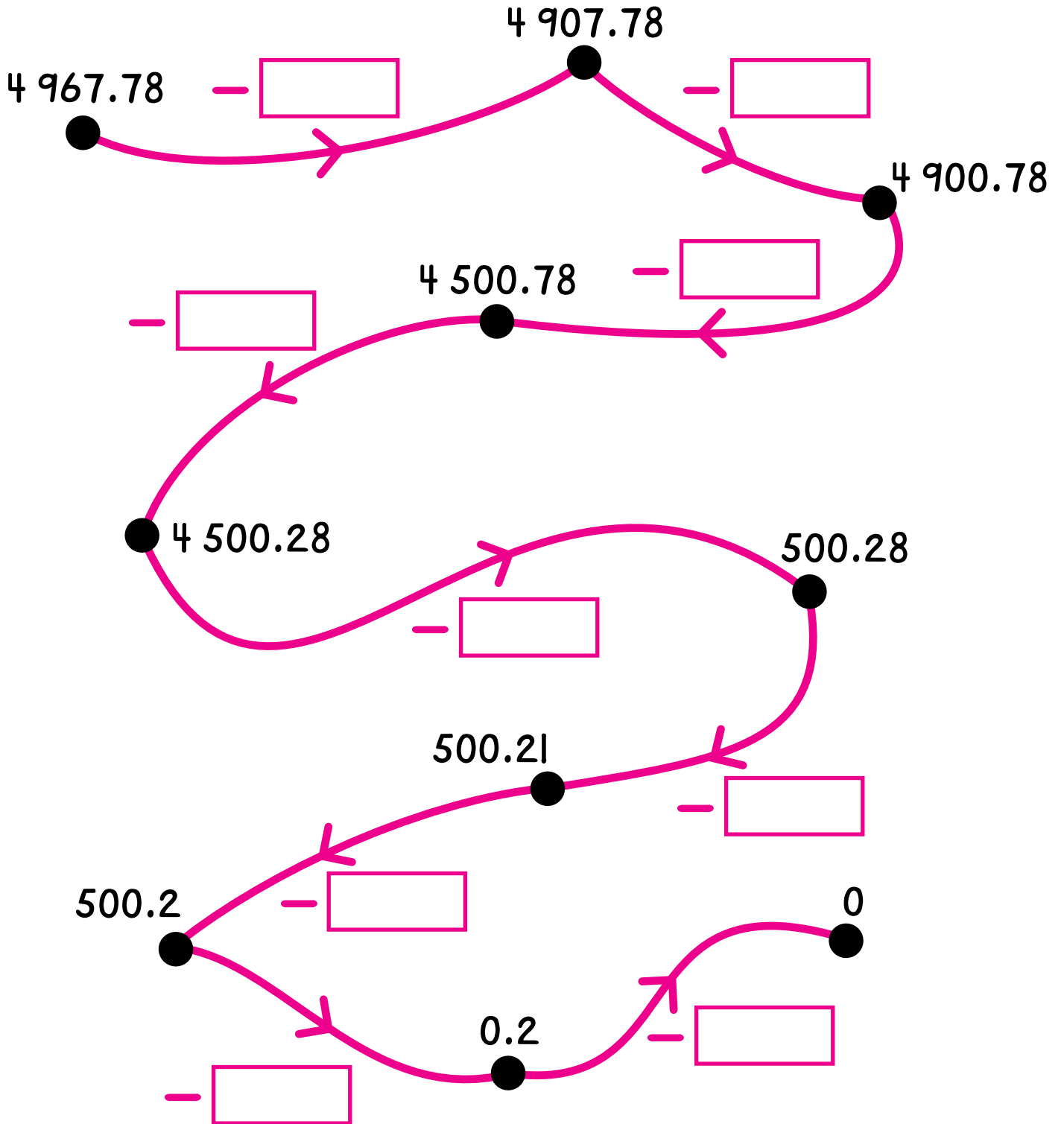Less than 0   Less than $\widehat{8}$

Yabu

Who is Yabu? _____

4

Draw a quadrilateral that has the black segment as one side and that has three sides the length of this red segment. You will need a compass.

Wipe-out

Fill in the boxes for the arrows.

4 907.78

4 967.78 — [ ]

— [ ]

4 900.78

4 500.78 — [ ]

— [ ]

4 500.28

500.28

— [ ]

500.21

— [ ]

500.2

— [ ]

0

— [ ]

0.2

— [ ]

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

```
  1 □ 9 5
    3 3 □
+ □ 4 8 8
─────────
  6 2 □ 7
```

```
  7 □ 8 6
- □ 2 □ 7
─────────
  4 7 5 □
```

Add.

$340 + 97 + 16\,823$

_____

Subtract.

$76\,092 - 1459$

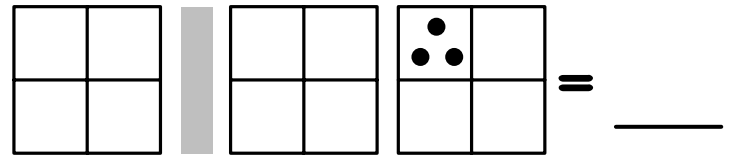_____

7

At City School they need 1 teacher for every 25 students. How many teachers do they need for 275 students? _____
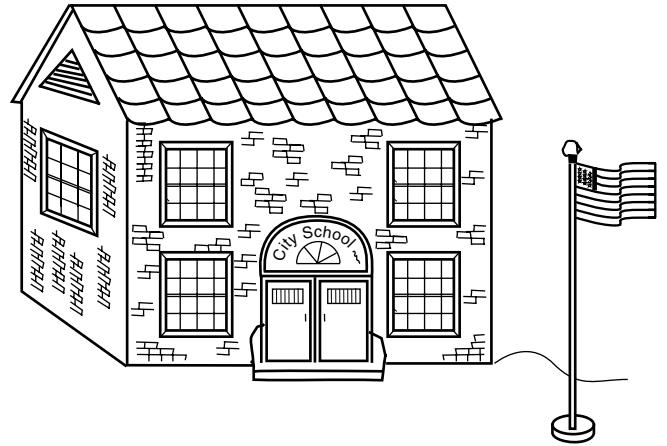
During lunch time at school, they need help from 2 mothers for every 10 kindergarten students. How many mothers do they need for 40 kindergarten students? _____

Complete.

 = ____   = ____

 = ____   = ____
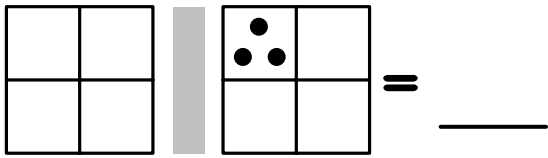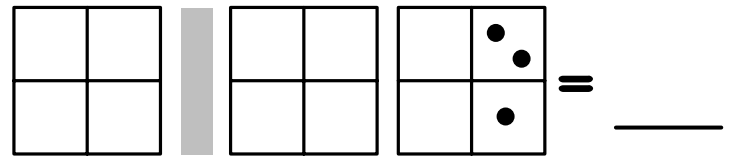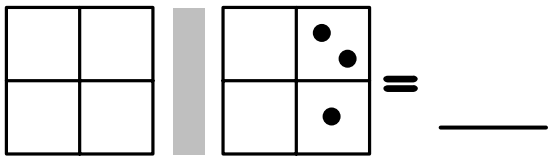
Label these dots with the four numbers above.

is less than
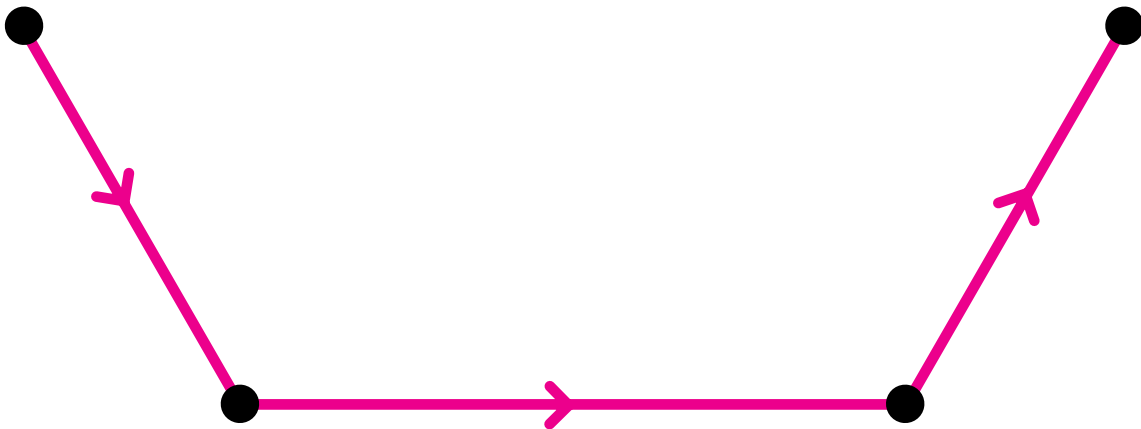
Using a ruler, draw a dot for each of these numbers on the number line.

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

$$\frac{1}{2} \qquad \frac{2}{2} \qquad \frac{3}{2}$$
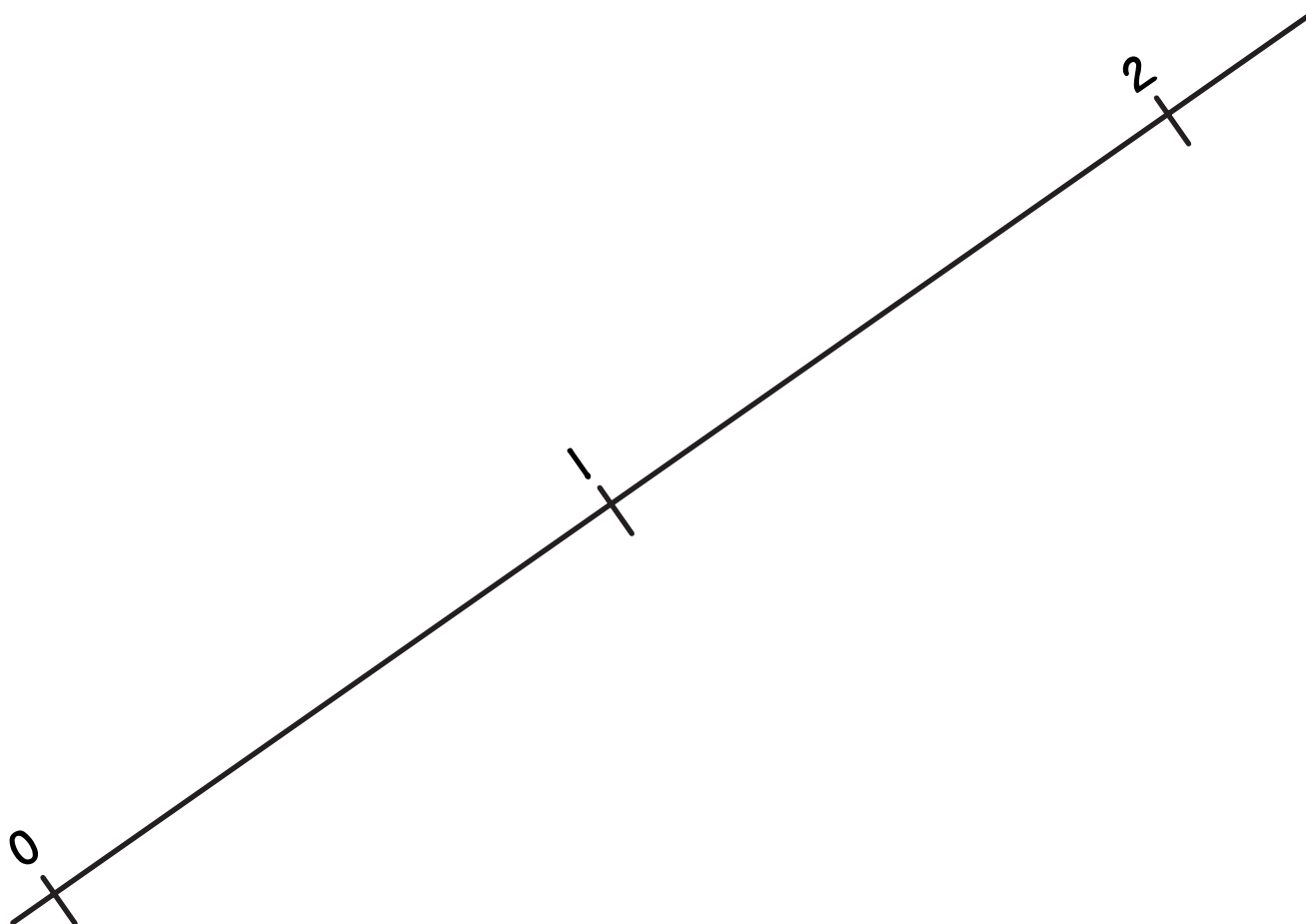
Put a one-digit number in each box to make the calculations correct.

☐ 6 ☐
× 3
---
2 3 ☐ 4

☐☐ R=☐☐
43) 1 1 3 7
− ☐☐ 0 | ☐ 0

☐ 7 ☐
− ☐ 5 ☐ | ☐

☐☐

Multiply.

8 4
× 4 7

Divide.

76) 2 6 6 2 7
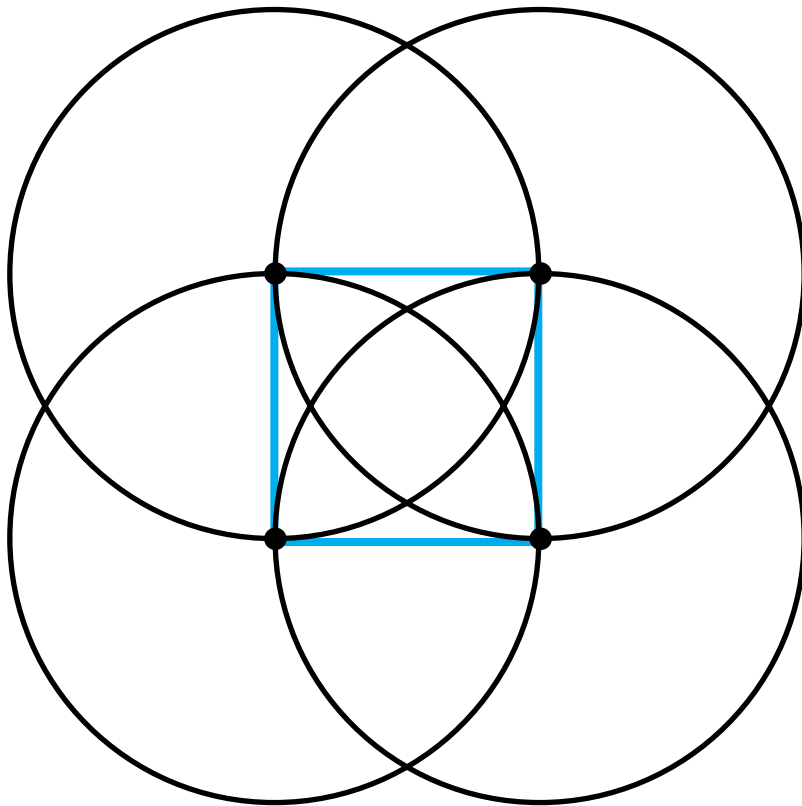
Do not use a ruler to measure in doing these problems.

1) The blue segments all have the same length. Draw more blue segments in the picture so that all of the blue segments have the same length.

2) Use red to draw another set of line segments in the picture so that all of the red segments have the same length.

3) Use green to draw a third set of line segments in the picture so that all of the green segments have the same length.

Complete.

$$3 \times 18 \ = \ \boxed{}$$

$$3 \times 1.8 \ = \ \boxed{}$$

$$3 \times 0.18 = \ \boxed{}$$

$$8 \times 910 \ = \ \boxed{}$$

$$8 \times 91.0 \ = \ \boxed{}$$

$$8 \times 9.10 \ = \ \boxed{}$$

$$8 \times 0.910 = \ \boxed{}$$

$$7 \times 6 \ = \ \boxed{}$$

$$0.7 \times 6 \ = \ \boxed{}$$

$$0.7 \times 0.6 = \ \boxed{}$$

Label the blue arrows.

$\square\times$

$3\times$ $\div2$ $5\times$ $\div4$

$\square\times$

$\square\times$ $\square\times$

$\square\times$ $\square\times$
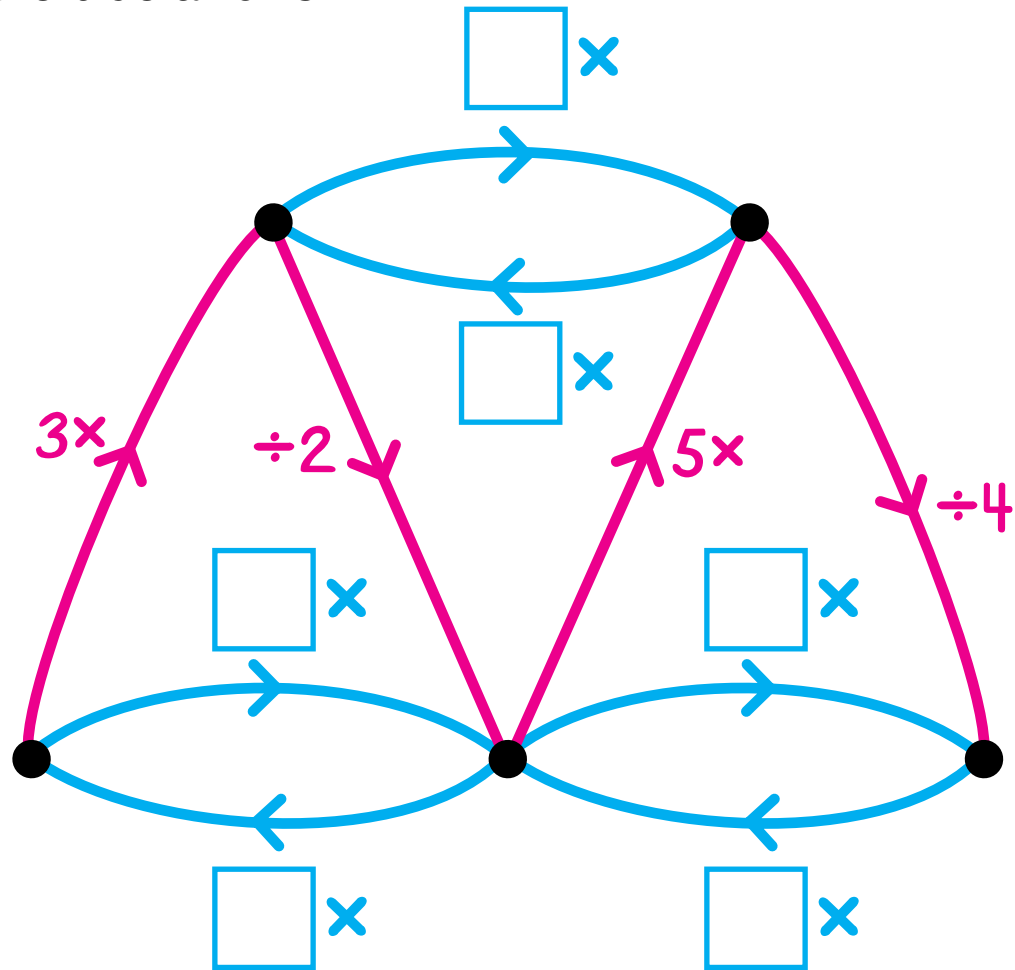
Complete these calculations.

$\frac{3}{2} \times 18 = $ _____ $\frac{2}{5} \times 30 = $ _____

$\frac{2}{3} \times 18 = $ _____ $\frac{5}{2} \times 30 = $ _____

$\frac{5}{4} \times 40 = $ _____ $\frac{4}{5} \times 40 = $ _____

Timely Questions

Show your work for each problem in the space provided.

1. Ms. Shoreham works $7\frac{1}{2}$ hours each day and also has a 40-minute lunch break. If she begins work at 7:45 AM, what time does she finish? _____
(Remember to indicate AM or PM)

2. Bernie is 11 years and 11 months old and his mother is 36 years and 2 months old. How old would Bernie's mother have been when he was born? _____

Color in red the indicated fractional part of each square.
Use a ruler to divide the squares accurately.

$\frac{1}{2}$

$\frac{2}{5}$

$\frac{3}{4}$

$\frac{3}{5}$
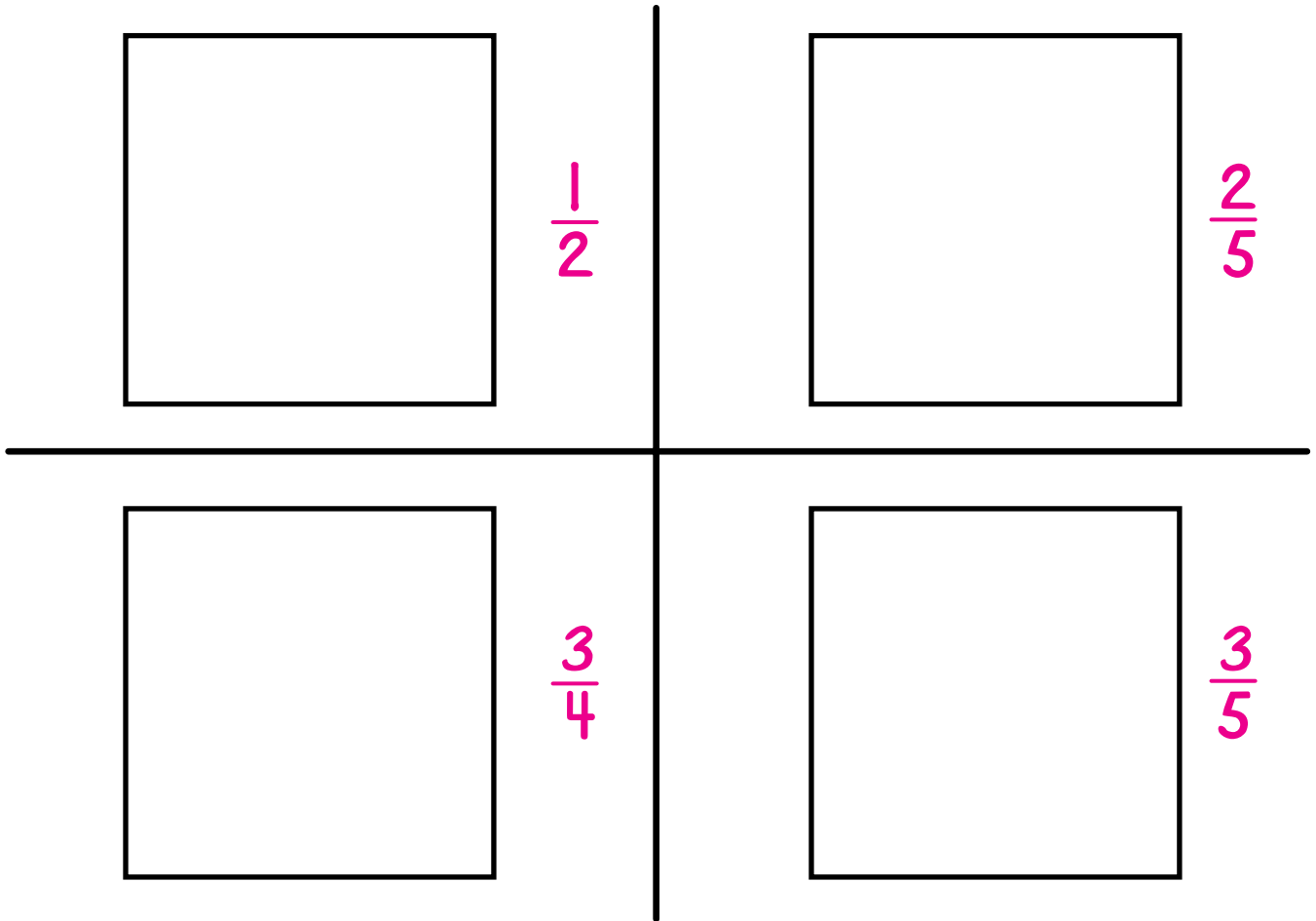
Draw all of the possible red arrows between these numbers.

is less than

$\longrightarrow$

$\frac{1}{2}$ ●

● $\frac{2}{5}$

$\frac{3}{4}$ ●

● $\frac{3}{5}$

16

Average Temperature (degrees Celsius)
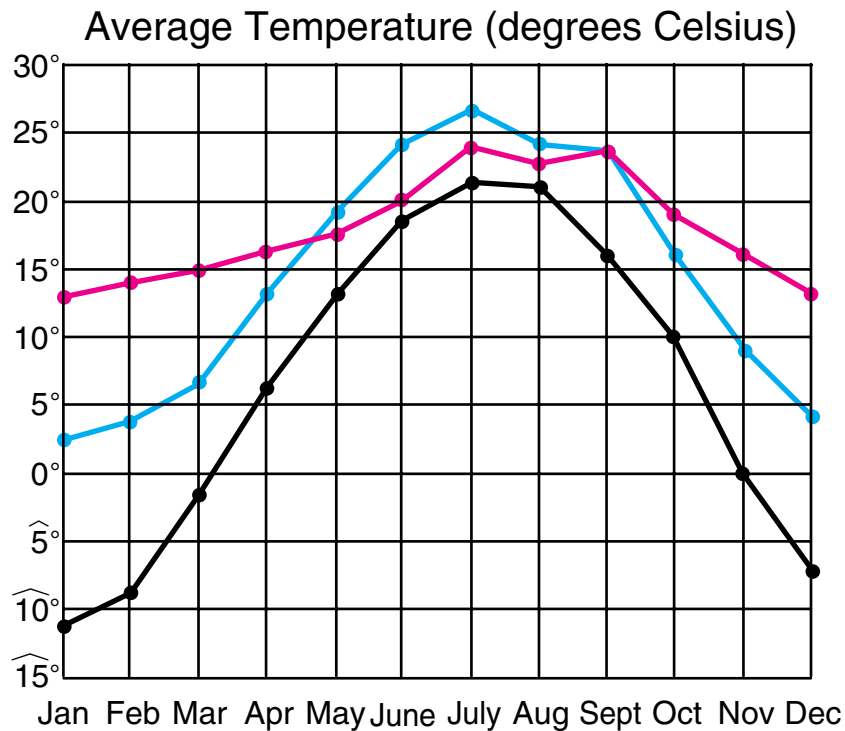
Minneapolis   Washington, D.C.   Los Angeles

What is the average February temperature in Minneapolis? _____

How much colder is Minneapolis than Los Angeles in September? _____

in January? _____

In which month is Minneapolis's average temperature closest to Los Angeles's?

_____ How close?_____

In which months is Washington's average temperature below 10°C?

_____

In which months is Los Angeles at least 10°C warmer than Washington, D.C.?

_____

17

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

22 $\qquad$ $\widehat{12}$

+ [ ]   − [ ]

$\widehat{2}$

$\widehat{4}$

+ [ ]   − [ ]

41 $\qquad$ $\widehat{23}$

18
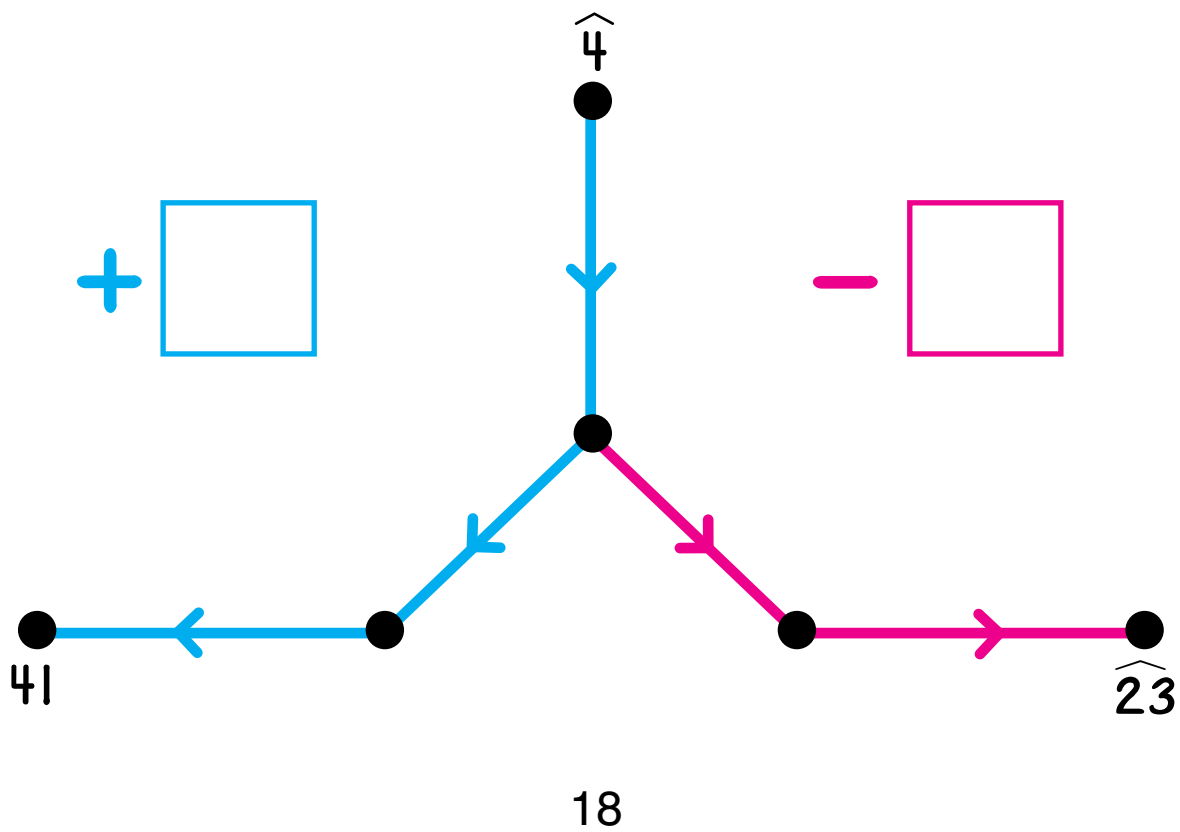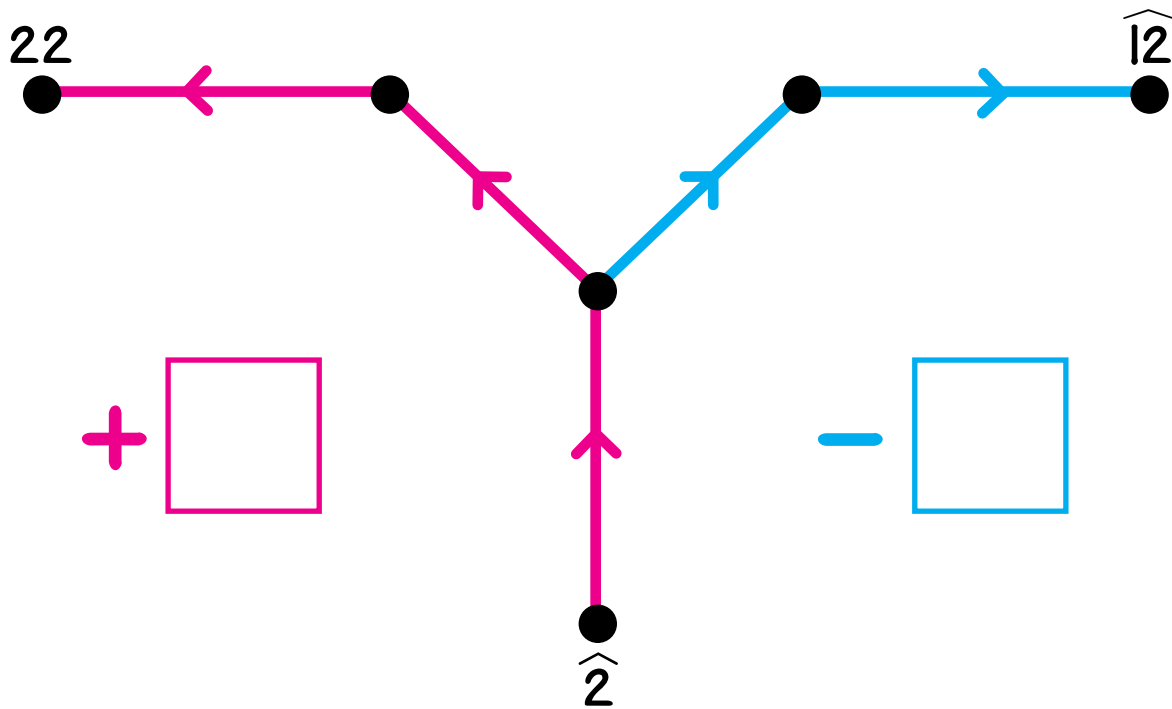
How Old?

Lillian is 8 years older than Gina. The sum of their ages is 30 years. How old is Lillian? _____ Gina? _____

How Rich?

Andre has exactly ten coins in his pocket. He has only dimes and quarters. If he has $2.05, how many quarters does he have? _____ dimes? _____

Fill in the boxes.

$$\frac{1}{2} = \frac{7}{14} = \frac{\square}{8} = \frac{3}{\square} = \frac{\square}{10} = \frac{13}{\square}$$

$$\frac{3}{5} = \frac{9}{15} = \frac{\square}{10} = \frac{15}{\square} = \frac{\square}{50} = \frac{21}{\square}$$

Complete. You may use the different names for $\frac{1}{2}$ and $\frac{3}{5}$ at the top of this page.

$$\frac{3}{5} + \frac{1}{2} = \underline{\hspace{3cm}}$$

$$\frac{3}{5} - \frac{1}{2} = \underline{\hspace{3cm}}$$

TEXAS

Amarillo

Dallas

El Paso

Houston

San Antonio

Scale: 1 cm on the map = 100 kilometers

1. On the map, what is the length of a line segment between El Paso
   and San Antonio? _____ cm
   What is the actual distance between El Paso and San Antonio? _____ km

2. On the map, what is the length of a line segment between Dallas and
   Houston? _____ cm
   What is the actual distance between Dallas and Houston? _____ km

3. If an airplane flies 600 kilometers in 1 hour, about how long should the
   flying time be from El Paso to San Antonio? (Circle the closest answer.)
        50 minutes   1 hour 20 minutes   1 hour 50 minutes

4. If an airplane flies 400 kilometers in 1 hour, about how long should the
   flying time be from Dallas to Houston? (Circle the closest answer.)
        50 minutes   1 hour 10 minutes   1 hour 30 minutes

27 810

27 810 is divisible by which of these numbers? Circle your answers

1   9   4

3   6   8

---

1 010

1 010 is divisible by which of these numbers? Circle your answers
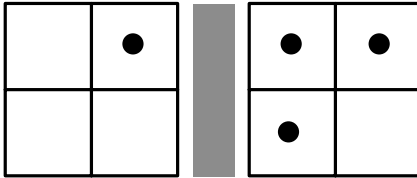
2   3   5

10   4   6

Dano is a secret number.

Dano can be put on this Minicomputer by adding just a ②-checker.

Dano could be _____, _____, _____, _____, _____, _____, _____, or _____.

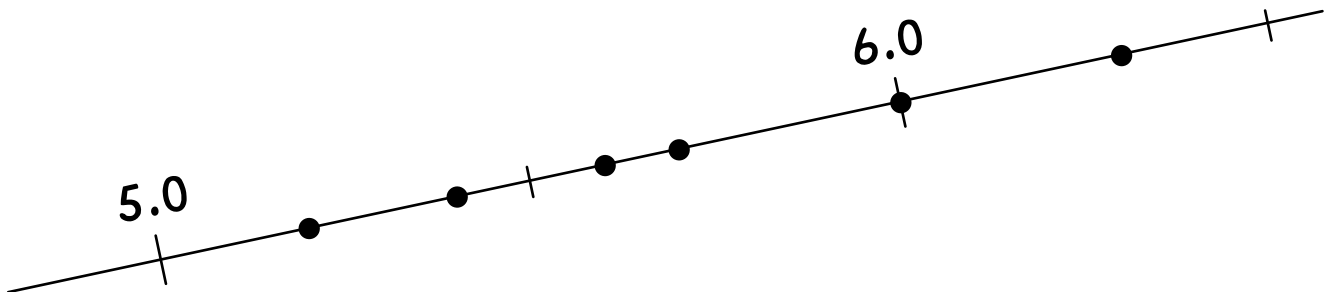Clue 2

$- \boxed{0.3} = \cdots$

701   Dano

Dano could be _____, _____, _____, or _____.

Clue 3

Dano is one of the dots on this number line.

6.0

5.0

Who is Dano? _____

A city council must choose a committee of three people from five eligible members: Arlene, Bret, Carla, Dinah, and Ed. The selection is not easy because some members are jealous of others and some have close friendships.

- Arlene will serve on the committee with anyone.

- Bret won't serve on the committee with Arlene.

- Carla will serve on the committee only if Bret and Dinah also serve.

- Dinah won't serve if Arlene or Carla also serve.

- Ed won't serve unless Dinah also serves.

Can you select a committee of three people so that everyone is satisfied?

Who is on your committee? _____, _____, _____

Match each red tag with a blue tag.

$$\frac{7}{5} + \frac{3}{5}$$

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

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

$$\frac{4}{5}$$

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

$$0.9$$

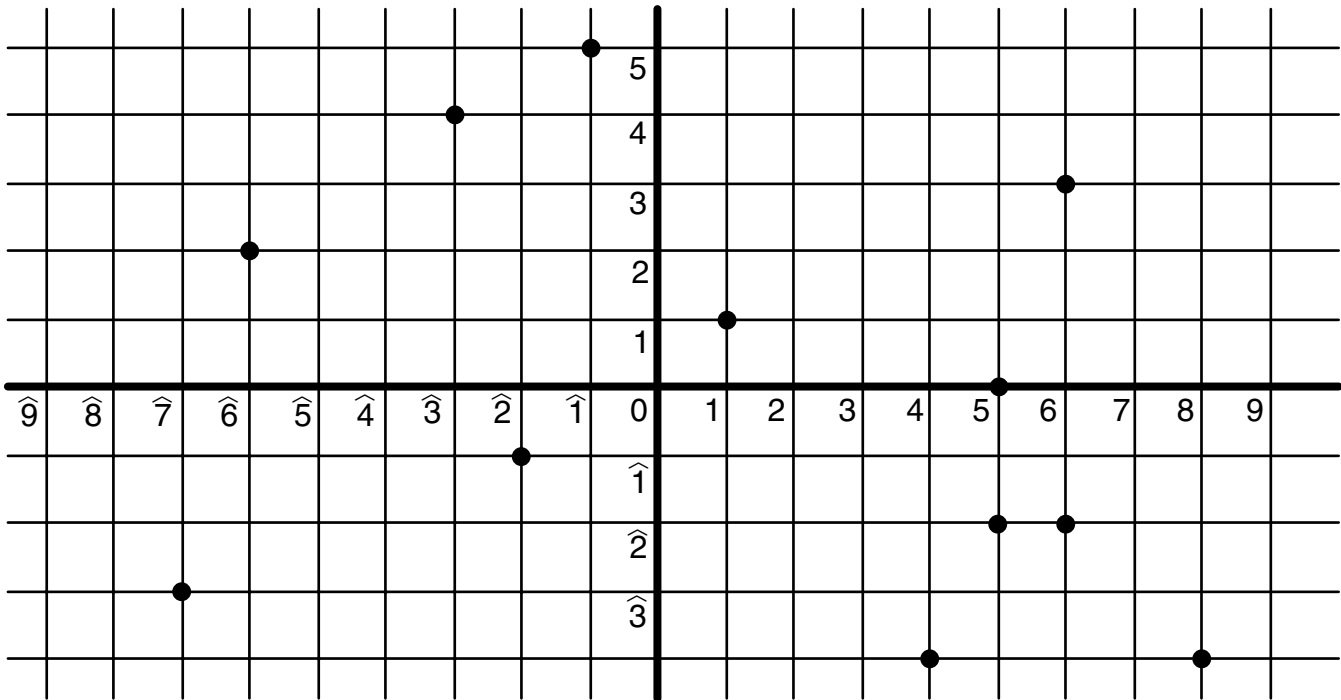$$\frac{1}{2} - \frac{1}{6}$$

$$2$$

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

$$\frac{1}{3}$$

Tim and Tam are secret numbers.

Clue 1

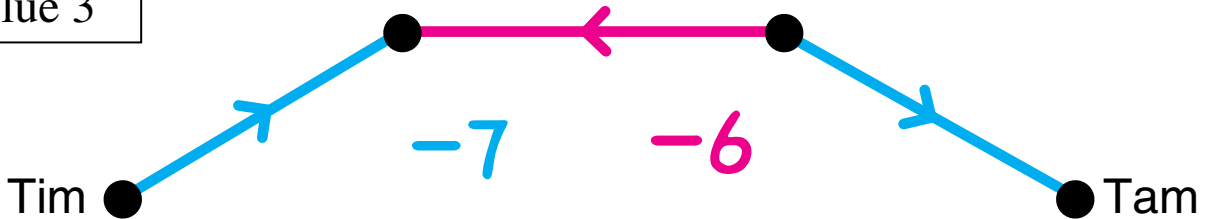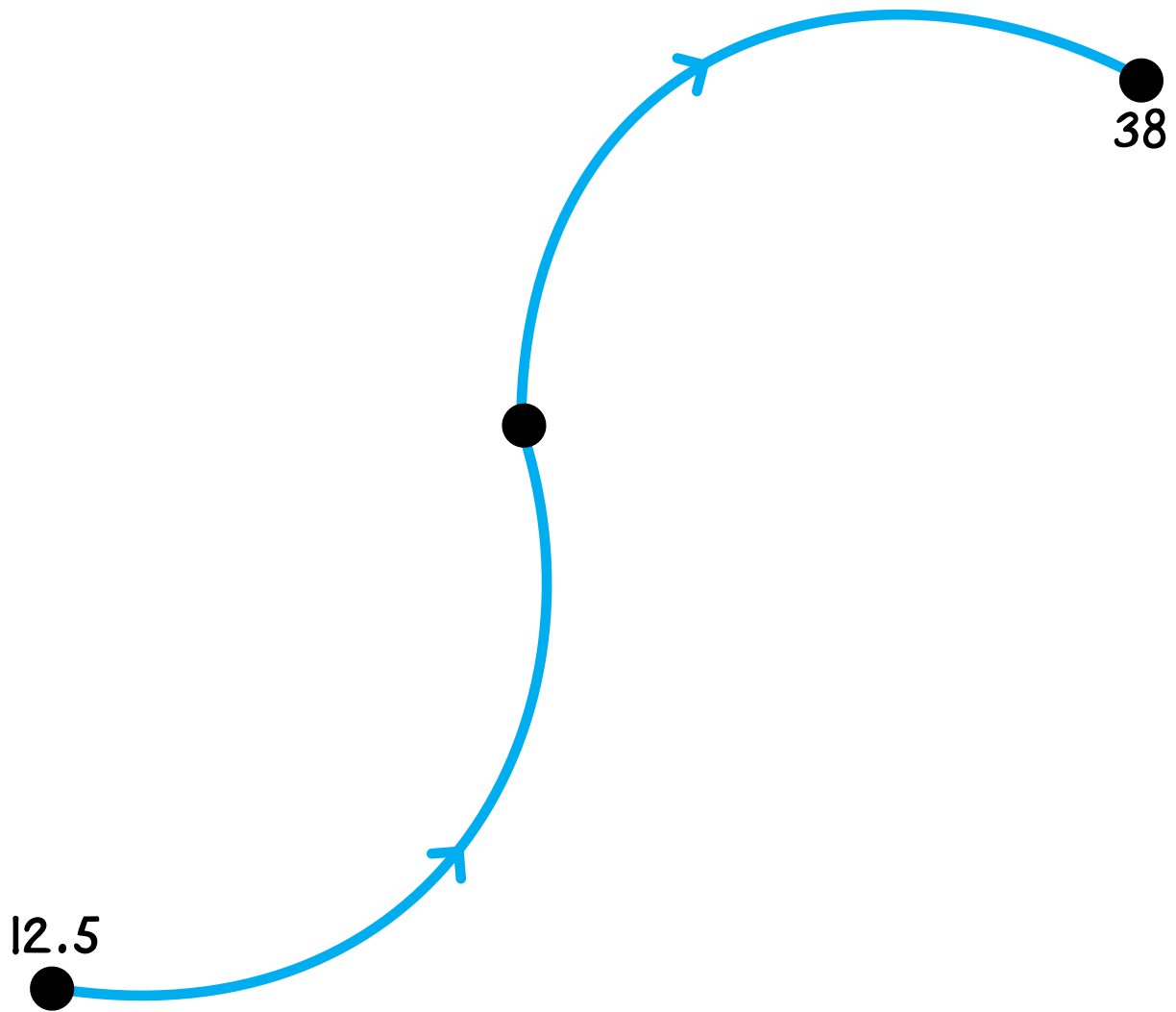(Tim, Tam) is one of the dots on this grid.

Clue 2

Tim + Tam > 3

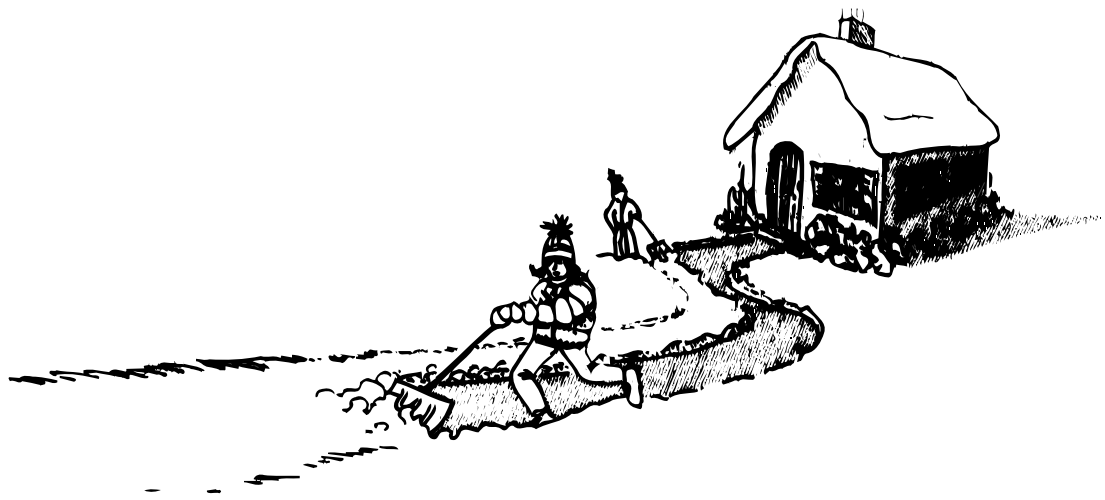(Tim, Tam) could be (___, ___), (___, ___), (___, ___), (___, ___), or (___, ___).

Clue 3
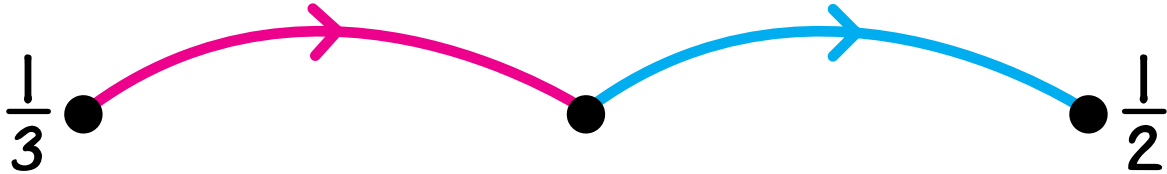

Tim   −7   −6   Tam

(Tim, Tam) is (___, ___).

26

Build a road from 12.5 to 38 with two arrows. Each arrow must be for ✚, ➖, ✖, or ➗ a one-digit whole number.

38

12.5

Amy shovels the sidewalk three times as fast as her little brother. If they clear a sidewalk 16 meters long, what length does Amy clear? _____

What length does her little brother clear? _____

Pair the tags.

$\frac{1}{3}$ ● ⟶ ● ⟶ ● $\frac{1}{2}$

$+\frac{1}{4}$	$-\frac{1}{6}$
$-\frac{1}{4}$	$\times\frac{6}{7}$
$\times\frac{3}{4}$	$\times 6$
$\div\frac{1}{2}$	$\times\frac{3}{10}$
$\times 5$	$\div\frac{1}{2}$

Tira is a secret whole number.

Clue 1

Positive divisors of 30   **Multiples of Tira**
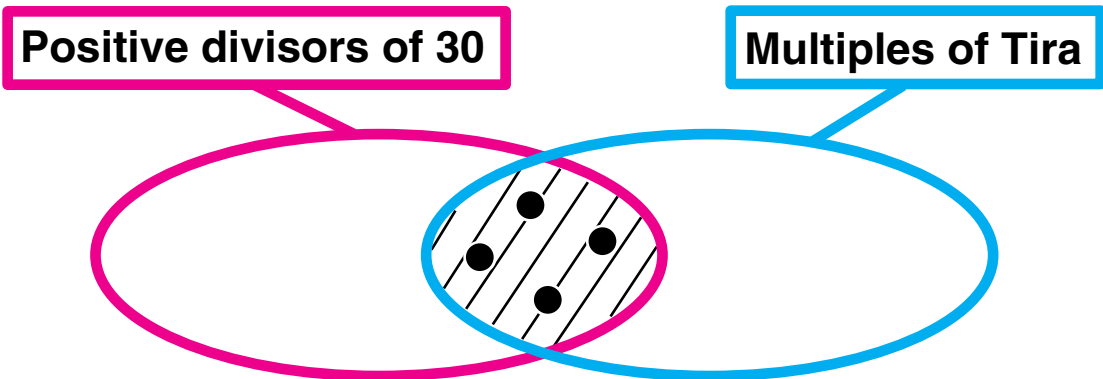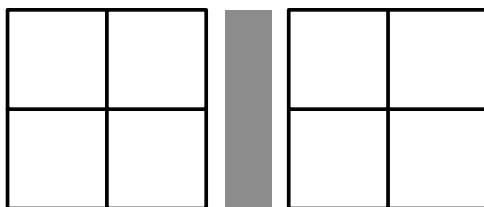

Tira could be _____, _____, or _____.

Clue 2

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

(2)   (7)

Who is Tira? _____

Complete.

$$||^{0} = |$$
$$||^{1} = \underline{\hspace{3em}}$$
$$||^{2} = \underline{\hspace{3em}}$$
$$||^{3} = \underline{\hspace{3em}}$$
$$||^{4} = \underline{\hspace{3em}}$$
$$||^{5} = \underline{\hspace{3em}}$$
$$||^{6} = \underline{\hspace{3em}}$$
$$||^{7} = \underline{\hspace{3em}}$$

Describe patterns you notice.

Complete.   Sum of digits

$$|^{2} = | \qquad\qquad |$$
$$||^{2} = \underline{\hspace{3em}} \qquad\qquad \underline{\hspace{3em}}$$
$$|||^{2} = \underline{\hspace{3em}} \qquad\qquad \underline{\hspace{3em}}$$
$$||||^{2} = \underline{\hspace{3em}} \qquad\qquad \underline{\hspace{3em}}$$
$$|||||^{2} = \underline{\hspace{3em}} \qquad\qquad \underline{\hspace{3em}}$$

Predict. $|||\,|||\,|||^{2} = \underline{\hspace{3em}}$ $\underline{\hspace{3em}}$

Describe patterns you notice.

Pim is a secret number.

Clue 1

$+5=$ ⋯ ⁻3

Pim

$+0.6=$ ⋯

$+4=$ ⋯

18.8

0
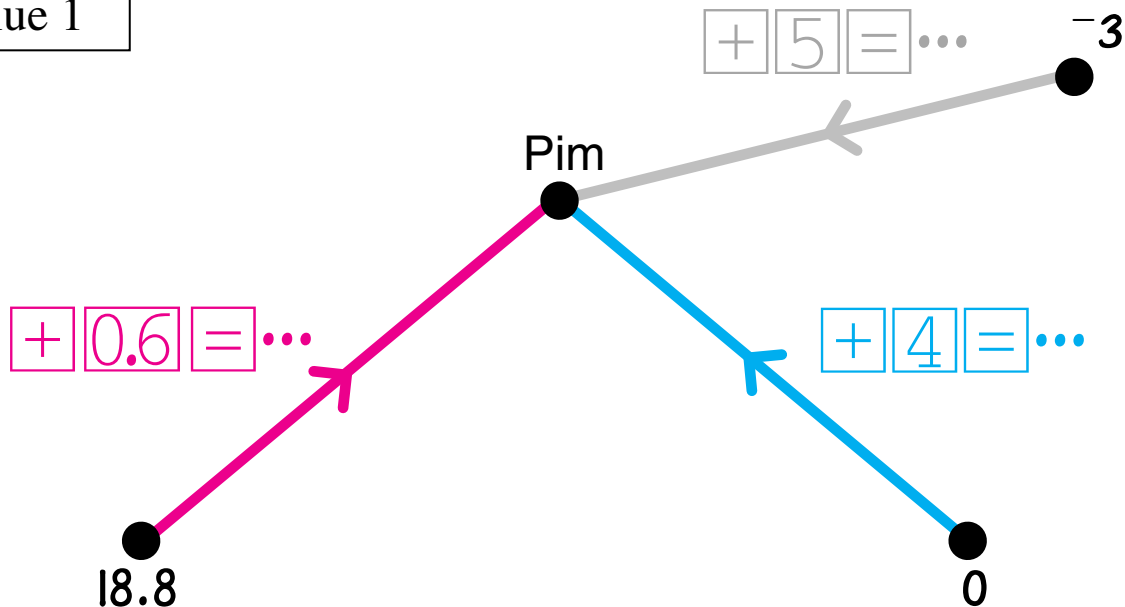
Pim could be _____, _____, _____, _____, _____, _____, _____, _____, and so on.

Clue 2

÷10

Pim

I am between 4 and 5.

Who is Pim? _____