## CSMP Mathematics for the Intermediate Grades Part II

 Worksheets
## What's In This Book?

This book contains all the worksheets you will need for CSMP for the Intermediate Grades, Part II. Worksheets are labeled with the same letter and number as the lessons with which they are used. In this book, they are in the following order:

N Worksheets

| N1 | N11 | N23 |
| :--- | :--- | :--- |
| N2 | N12 | N24 |
| N3 | N14 | N27 |
| N4 | N15 | N29 |
| N5 | N16 | N30 |
| N7 | N17 | N31 |
| N8 | N19 | N32 |
| N9 | N20 | N33 |
| N10 | N22 | N34 |

## L Worksheets

L2 L6 L9
G Worksheets

| G1 | G5 | G8 |
| :--- | :--- | :--- |
| G2 | G6 | G12 |
| G3 | G7 | G13 |

W Worksheets

| W4 | W10 |
| :--- | :--- |
| W9 | W11 |

Name


Nabu must put 167 softballs into boxes. Each box holds 10 softballs. Use an arrow road to calculate how many boxes Nabu will be able to fill.

167

How many boxes will Nabu be able to fill?

How many softballs will be left over?

## Name

$\qquad$

Nabu must put 167 softballs into boxes. Each box holds 6 softballs. Use an arrow road to calculate how many boxes Nabu will be able to fill.

167

How many boxes will Nabu be able to fill?

How many softballs will be left over?

## Name

$\qquad$

## N1 ***

Nabu must put 350 softballs into boxes. Each box holds 8 softballs. Nabu uses this arrow picture to calculate how many boxes he will be able to fill.


How many boxes will he be able to fill? $\qquad$

Nabu must put 395 softballs into boxes. Each box holds 8 softballs. Nabu uses this arrow picture to calculate how many boxes he will be able to fill.


How many boxes will he be able to fill?


A factory which manufactures softballs puts 12 softballs into each small box and then puts 10 small boxes into each large box. A large city orders 4000 softballs for their summer softball leagues. Use an arrow picture to calculate the number of full large boxes they will receive.

How many large boxes will they receive? $\qquad$

How many extra small boxes will they receive? $\qquad$

How many balls will be left to package separately?

Name
N2
*

## What number is on the Minicomputer?



Name


Put each number on the Minicomputer using exactly one of these checkers:
(2)
(3)
(4)
(5)
(6)
(7)
(8)
(9)


Name
N2 ***

Diz is a secret number.
Clue 1
Diz is a multiple of 3 and can be put on this Minicomputer using exactly one of these checkers.
(2)
(3)
(4)
(5)
(6)
(7)
(8)
(9)

Diz could be $\qquad$ , __, $\qquad$ , _ , $\qquad$ , $\qquad$ , $\qquad$ , or $\qquad$ .

Clue 2


Diz could be $\qquad$ or $\qquad$ .

Clue 3
Diz has exactly six divisors.


Name
N2 ****

Put each number on the Minicomputer using exactly two of these checkers:
(2)
(3)
(4)
(5)
(6)
(7)
(8)
(9)


Name


Label the dots.



Name

## Clue 1

Flip is in this arrow picture.


Name

## N3 ***

Clue 2
Flip can be put on this Minicomputer using exactly one checker (positive or negative) on each board.


Flip could be $\qquad$ or $\qquad$ or $\qquad$ .

Clue 3

$\qquad$

N4

Trade (10-checkers for regular checkers. Complete the number sentences.

$10 \times \square=$

$10 \times$

$=$

$10 \times \square$

$10 \times$

$\longrightarrow$

$10 \times$ $\square$ $\longrightarrow$

Name


Draw as many red arrows as possible in this picture.

## $10 \times 35$

$\stackrel{\bullet}{\bullet} 10 \times 35.6 \quad 10 \times 35.2$
is less than

$10 \times 36$
Fill in the boxes.

$$
\begin{aligned}
& 10 \times 35=\square \\
& 10 \times 35.2=\square \\
& 10 \times 35.6=\square \\
& 10 \times 36=\square
\end{aligned}
$$

Name

$$
\text { N4 } \quad * *
$$

Draw as many red arrows as possible in this picture.

## $10 \times 48.1$

$10 \times 48.2$


Fill in the boxes.

$$
10 \times 48.03
$$

$$
\begin{aligned}
& 10 \times 48.2=\square \\
& 10 \times 48.1=\square \\
& 10 \times 48.03=\square \\
& 10 \times 48=\square
\end{aligned}
$$

Dote is a secret number.
Clue 1
Dote is the ending number of an arrow road that starts at 5 and that has exactly two +4 arrows and two 10x arrows.

5
$+4$
10x
$\qquad$ .

Clue 2


Who is Dote? $\qquad$

$$
\begin{aligned}
& \square \times 10=\text { Dote } \\
& \square \times 50=\text { Dote }
\end{aligned}
$$

Name

## N5 *

Draw arrows for "is less than." You may use your number lines to help you.


Pair tags for numbers that are equal.


Name
N5 **

Label the marks on each number line.


Complete.

$$
\begin{array}{r}
\frac{1}{5}=\frac{\square}{10}=\frac{\square}{15} \\
\frac{3}{5}=\frac{\square}{10}=\frac{\square}{15} \\
I=\frac{\square}{5}=\frac{\square}{10}=\frac{\square}{15}
\end{array}
$$

Name

## N5 ***

Locate $\frac{2}{3}$ and $\frac{3}{5}$ on this number line. Use a ruler to locate each number accurately.


Which is greater, $\frac{2}{3}$ or $\frac{3}{5} ?$ $\qquad$
Locate $\frac{3}{4}$ and $\frac{5}{6}$ on this number line. Use a ruler to locate each number accurately.


Which is greater, $\frac{3}{4}$ or $\frac{5}{6}$ ?

Name
N5 ****

Label the dots.


Name

Label each arrow + or - some whole number.


Name


Fill in the boxes to give subtraction facts for 35 .

| $50-\square=35$ | $51-\square=35$ | $\square-100=35$ |
| :--- | :--- | :--- |
| $60-\square=35$ | $61-\square=35$ | $100-\square=35$ |
| $80-\square=35$ | $\square-46=35$ | $500-\square=35$ |
| $\square-55=35$ | $\square-146=35$ | $1000-\square=35$ |

Name

Pick is a secret number.
Clue 1
Pick is the ending number of an arrow road starting at 35 and using exactly two red arrows and two blue arrows.

$$
2 x-20
$$

## $35 \bullet$


$\qquad$

Name

What number is on the Minicomputer?

$=$


II

Name
N8 **

Move one checker to put 116 on the Minicomputer.


Move one checker to put 155 on the Minicomputer.


Move one checker to put 340 on the Minicomputer.


Move one checker to put $\widehat{10}$ on the Minicomputer.


Name
N8 ***

Move exactly two checkers to put 10 on the Minicomputer.


Move exactly two checkers to put 100 on the Minicomputer.


Move exactly two checkers to put 200 on the Minicomputer.


Name

## N9 *

Label the dots and draw all of the missing red arrows.
is a positive divisor of



Name
N9 **

Zip is a secret number.
Clue 1
is a positive divisor of


Zip could be $\qquad$ , $\qquad$ , $\qquad$ , $\qquad$ , $\qquad$ , and so on.

Clue 2


Who is Zip ?

Name

Label all of the dots. Use pencil to draw as many 20x arrows as you can.


Use the arrow picture to solve these problems.

$$
\begin{aligned}
& 20 \times 6= \\
& 20 \times 12= \\
& 20 \times 24= \\
&
\end{aligned}
$$

$$
\begin{array}{r}
60 \div 10= \\
120 \div 10= \\
1200 \div 10=
\end{array}
$$

Name
Label all of the dots. Use pencil to draw as many 20x arrows as you can.


Use the arrow picture to solve these problems.

$$
\begin{aligned}
& 32 \div 10= \\
& 4 \div 10= \\
&
\end{aligned}
$$

Name

## N10 ***

Label all of the dots. Use pencil to draw as many 30x arrows as you can.


Use the arrow picture to solve these problems.
$18.9 \div 10=$ $\qquad$

$$
\begin{array}{r}
9 \times 0.21= \\
6.3 \div 9= \\
0.63 \div 3= \\
0.63 \div 9=
\end{array}
$$

$18.9 \div 30=$ $\qquad$

$$
63 \div 30=
$$

$\qquad$

$$
21 \div 30=
$$

$\qquad$

Name

## Clue 3

Zip is in this picture.


Zip could be $\qquad$ , , $\qquad$ , $\qquad$ , or

Name
N11(b)

Clue 4
Zip is one of these numbers.


Who is Zip?

Name
N11(c)

Mot is a secret number.
Clue 1


Mot could be $\qquad$ and so on.

Clue 2
Mot can be put on this Minicomputer with one positive and one negative checker.

- ${ }^{\circ}$


Mot could be $\qquad$ , _ , $\qquad$
$\qquad$ , _ , , or $\qquad$ .

Clue 3
If you put Mot on the calculator display and press $\square \square \square \square \ldots, 4.5$ will appear.

Mot is $\qquad$ .

Name
N11(d)
Ark is a secret number.
Clue 1 Ark can be put on this Minicomputer with just a ©-checker.


Ark could be $\qquad$ , $\qquad$ , $\qquad$ , $\qquad$ , $\qquad$ , $\qquad$ , $\qquad$ , or $\qquad$

Clue 2 If you put Ark on the calculator display and press $\square \square \square \square \ldots, 24$ will appear.

Ark could be $\qquad$
$\qquad$
$\qquad$ , , or $\qquad$ .

Clue 3 Ark is in this arrow picture.
$\qquad$ .

Name

## N12 *

Build an arrow road from 1295 to the least possible positive number using arrows for $-400,-40$, and -4 .

$$
-400
$$

$$
-40
$$

$$
-4
$$

1295

What is your ending number? $\qquad$
How many arrows did you use?

Name $\qquad$ N12 **

Complete the table.


| Bif | Jif | Mif |
| :---: | :---: | ---: |
| 24 |  |  |
| 240 |  |  |
|  | 18 |  |
|  | 13 |  |
|  |  | 7 |
|  |  | 70 |
|  |  | 9.5 |
|  |  | 3.25 |

Roc is a secret number.
Clue 1
Roc is the ending number of an arrow road starting at 625 and using exactly two red arrows and two blue arrows.

$$
\div 5 \quad-25
$$

625

Roc could be $\qquad$ , $\qquad$ , $\qquad$ , $\qquad$ , $\qquad$ , or $\qquad$ .

Clue 2


Who is Roc? $\qquad$

Name

## N14 *

## +56 $\quad \cdot$



Ort could be any of four numbers listed below. Circle them.

$$
\begin{array}{cccc}
72 & 23 & 88 & 163 \\
73 & 90 & 358 & 48
\end{array}
$$



Tro could be any of four numbers listed below. Circle them.

$$
\begin{array}{cccc}
21 & 51 & -31 & 6 \\
19 & -19 & -34 & 66
\end{array}
$$

Name

## N14 **

Label the dots. Many solutions are possible.


Name
N14 ***

Jot is a secret number.
Clue 1

$$
\square 5 \square \cdot \cdot
$$



Jot could be $\qquad$ , $\qquad$ , $\qquad$ , _, , _ , , and so on.

What is the least positive number Jot could be? $\qquad$
What is the greatest negative number Jot could be? $\qquad$

Clue 2
Jot is a positive prime number less than 30.
Jot could be $\qquad$ , $\qquad$ , or $\qquad$ .

Clue 3

$$
\square \text { ——吅 }
$$



Who is Jot?

Fo is a secret number.
Clue 1
$+\sqrt{6}=$


Fo could be $\qquad$ , $\qquad$ , $\qquad$ , _ , $\qquad$
$\qquad$ , and so on.

What is the least positive number Fo could be? $\qquad$
What is the greatest negative number Fo could be? $\qquad$
Clue 2
Fo can be put on this Minicomputer using exactly four regular checkers.


Fo could be $\qquad$ , $\qquad$ , or $\qquad$ .

Clue 3


Who is Fo?

Name $\qquad$


Circle the greatest number. Draw a box around the least number.

$$
2 \times 98 \quad 2 \times 99 \quad 2 \times 98.6
$$

Complete.

$$
\begin{array}{r}
98 \\
\times \quad 2 \\
\hline
\end{array}
$$

99
$\times 2$
98.6
$\times 2$

Circle the greatest number. Draw a box around the least number.

$$
4 \times 845.9 \quad 4 \times 846 \quad 4 \times 845
$$

Complete.


846
4
$\times$
$\begin{array}{r}845 \\ \times 4 \\ \hline\end{array}$

Circle the greatest number. Draw a box around the least number.
$8 \times 2$
$8 \times 1.24$
$8 \times 1$

Complete.

$$
\begin{array}{r}
2 \\
\times 8 \\
\hline
\end{array}
$$



Name

## N15 **

Circle the greatest number. Draw a box around the least number.

$$
7 \times 68
$$

$7 \times 67.50$
$7 \times 69$
Complete.

67.50
$\begin{array}{r}69 \\ \times 7 \\ \hline\end{array}$

Circle the greatest number. Draw a box around the least number.
$6 \times 2.97$
$6 \times 2$
$6 \times 3$

Complete.


3
$\begin{array}{r}6 \\ \times \\ \hline\end{array}$

Circle the greatest number. Draw a box around the least number.

$$
9 \times 23.65 \quad 9 \times 23 \quad 9 \times 23.47 \quad 9 \times 24
$$

Complete.
$\begin{array}{r}23.65 \\ \times \quad 9 \\ \hline\end{array}$
$\begin{array}{r}23 \\ \times 9 \\ \hline\end{array}$
$\begin{array}{r}23.47 \\ \times \quad 9 \\ \hline\end{array}$
$\begin{array}{r}24 \\ \times 9 \\ \hline\end{array}$

Name


Label the dots on each number line.


Use a ruler to locate $\frac{1}{5}$ and $\frac{3}{5}$ on this number line.


Use a ruler to locate $\frac{1}{3}, \frac{2}{3}, \frac{5}{3}$, and $\frac{7}{3}$ on this number line.


Label the dots.


Place these numbers in the string picture.

$$
\begin{array}{lllll} 
& \frac{4}{5} & & \frac{7}{5} & \frac{13}{5} \\
\frac{7}{8} & & \frac{13}{8} & & \frac{7}{3}
\end{array}
$$



## Name

N16 ***

Angie, Darren, Shawn, and Cindy mow Mr. Hillman's large lawn.
The picture shows the part of the lawn each child mows.



What fraction of the lawn did each child mow?
Angie $\qquad$ Darren $\qquad$ Shawn $\qquad$ Cindy $\qquad$
If Mr. Hillman pays the children $\$ 20$, how much money should each child receive?
Angie $\qquad$ Darren $\qquad$ Shawn $\qquad$ Cindy
$\qquad$

Angie, Darren, and Cindy mow the Grant's lawn for \$18. The children divide the money fairly according to how much of the lawn each child mows. Angie receives \$6, Darren receives \$3, and Cindy receives the rest.

How much money does Cindy receive?
Show the amount of lawn each child mows.


What fraction of the lawn does each child mow?
Angie $\qquad$ Darren $\qquad$ Cindy $\qquad$

Name

## N16 ****

## $4<$ Lea < 5

Fill in the boxes for fractions Lea could be.


List four other fractions Lea could be: $\qquad$ , $\qquad$ , $\qquad$ , or $\qquad$ .

Place each fraction in a box.

$$
\frac{5}{2} \quad \frac{13}{4} \quad \frac{6}{11} \quad \frac{19}{14}
$$



Name

## N17 *

Use this rule for red arrows...

to label the dots in the picture below.


Use this rule for red arrows...

to label the dots in the picture below.


Name

## N17 ***

Use this rule for red arrows...

to label the dots in the picture below.


Name
N17 ****

Use this rule for blue arrows...

to label the dots in the picture below.


Name

## N19 *

A zookeeper feeds 5 monkeys.
Complete the number sentences.


Name

## N19 **

Complete.


$$
\begin{array}{ll}
\frac{3}{4} \times 24= & \frac{3}{4} \times 28= \\
\frac{3}{4} \times 52= & \frac{3}{4} \times 280=
\end{array}
$$

Complete.


$$
\begin{array}{ll}
\frac{2}{3} \times 24= & \frac{2}{3} \times 45= \\
\frac{2}{3} \times 30= & \frac{2}{3} \times 450=
\end{array}
$$

Name
N19 ***

Val and Hal are secret numbers.
Clue 1
Val is a multiple of 7 between 40 and 80 .
Val could be $\qquad$
$\qquad$
$\qquad$ ,, , $\qquad$ , or $\qquad$ .

Clue 2

$$
\mathrm{Val} \longrightarrow \mathrm{Hal}
$$



Clue 3

$$
-27
$$

$$
\mathrm{Val} \bigcirc \longrightarrow \mathrm{Hal}
$$

Who is Val? $\qquad$

Who is Hal? $\qquad$

Name

## N20 *

Label the dots.


Complete these calculations.

$$
\begin{array}{r}
1.5 \\
+2.7 \\
\hline
\end{array}
$$

$$
1.5+0.7=
$$

10.8
$+4.9$
$5.8-0.9=$
236.7
$0.7+0.8=$

$$
\begin{array}{r}
56.7 \\
+56.7 \\
\hline
\end{array}
$$

$$
2-0.7=
$$

Name

## N20 ***

Complete.
$10 \times \square=45 \quad 1.6+\square=2.5$
$\square \div 2=0.8 \quad \square \div 3=0.7$
$2-\square=0.4 \quad \square \div 10=3.2$

Write at least six more names for the number 0.3. One is done for you.

$$
1-0.7
$$

Name

## N22 *

Label the dots and the arrows in each picture. Arrows are for + or - some number.


Draw three +0.5 arrows in green.

Name $\qquad$
Pair the tags.


Name $\qquad$ N22 ***

Complete the chart.


| $\longrightarrow$ | $\longrightarrow$ |
| :---: | :---: |
| $2 x$ |  |
| $\div 2$ |  |
| $3 x$ |  |
| $\div 3$ |  |
| -0.9 |  |
| -1.4 |  |
| +2.6 |  |



## N23 *

A zookeeper feeds 4 monkeys. Bobo eats 3 shares. Complete the number sentences.


A zookeeper feeds 28 bananas to 7 monkeys.

Complete.


$$
\begin{array}{ll}
\frac{3}{7} \times 28= & \frac{4}{7} \times 28= \\
\frac{1}{7} \times 28= & \frac{7}{7} \times 28=
\end{array}
$$

Name

## N23 **



Complete.

$$
\begin{array}{ll}
\frac{2}{5} \times 15= & \frac{2}{5} \times 50= \\
\frac{2}{5} \times 35= & \frac{2}{5} \times \ldots=50
\end{array}
$$



$$
\begin{array}{ll}
\frac{6}{7} \times 28= & \frac{6}{7} \times \ldots=42 \\
\frac{6}{7} \times 42= & \frac{6}{7} \times \ldots=54
\end{array}
$$

Name
N23 ***


Complete the chart.


Write at least three names for the gray arrow.

Name
N23 $\boldsymbol{*} * * *$

Mi and Fa are two secret whole numbers.

## Clue 1



Complete this chart.

| Mi |  |  |  |  |  |  |  |  |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Fa |  |  |  |  |  |  |  |  |
| $\mathrm{Mi}+\mathrm{Fa}$ |  |  |  |  |  |  |  |  |

What do you notice about Mi + Fa? Write you answer below.

Clue 2

$$
\mathrm{Mi}+\mathrm{Fa}=8 \mathrm{I}
$$

$\qquad$
$\qquad$

Build an arrow road from 930 to the least possible positive number using these arrows.


930

Pam is planning a 930 km long hike. She hikes 7 km in one hour. Use your arrow picture to calculate how many hours she will walk. About how many hours will she walk?

Name
N24 **

$$
365 \div 5=73
$$

Complete.
$370 \div 5=\square \quad 360 \div 5=\square$
$390 \div 5=\square \quad 350 \div 5=\square$
$\square \div 5=76 \quad \square \div 5=69$

$$
480 \div 8=\square
$$

Complete.
$488 \div 8=\square \quad 472 \div 8=\square$
$520 \div 8=\square \quad \square \div 8=57$
$560 \div 8=\square \quad \square \div 8=54$

Name

## N24 ***



Phil lives in Brownsville and is planning a round-trip bicycle ride to visit Emporia, Salem, Vidalia, and then return to Brownsville. What distance will Phil bicycle? $\qquad$
Draw an arrow road to calculate the number of hours he must bicycle if he rides 14 km per hour.

About how many hours must he bicycle? $\qquad$
If he rides 6 hours per day, about how many days will he travel? $\qquad$

Name
The distance around the Earth is about 45000 km . If an airplane travels 1300 km per hour, calculate the number of hours of flying time it takes to fly around the world. You may use an arrow road.

45000 km

About how many hours? $\qquad$

Name

## N27 *

Label the dots. Many solutions are possible.
+4日 ${ }^{-\quad .}$


- 3 日••


Name

## N27 <br> 

Tix is a secret number.
Clue 1


Tix could be $\qquad$ , $\qquad$ , $\qquad$ ——, $\qquad$
$\qquad$
$\qquad$ , $\qquad$
$\qquad$ , and so on.

Clue 2
Tix is between 190 and 210.

Tix could be $\qquad$ , $\qquad$
$\qquad$
$\qquad$ , or $\qquad$ .

## Clue 3

Tix can be put on this Minicomputer using exactly one positive checker and one negative checker.


Who is Tix? $\qquad$

Name
N27 ***

Label the dots. Many solutions are possible.


Name
N27 ****

Tah is a secret number.

## Clue 1



Tah could be $\qquad$ , $\qquad$
$\qquad$
$\qquad$
$\qquad$ , $\qquad$ , $\qquad$ , $\qquad$ , and so on. Clue 2

Tah is a multiple of 4.

Tah could be $\qquad$ , $\qquad$
$\qquad$ , $\qquad$
$\longrightarrow, \quad$, and so on.

Clue 3


Who is Tah?

Name


Label the dots. Many solutions are possible. Many arrows could be added
to this picture without adding any new dots. Draw at least three of them.


Name

## N29 **

Pof is a secret number.
Clue 1
Pof can be put on this Minicomputer using exactly one regular checker.


Pof could be $\qquad$ , $\qquad$ ——, $\qquad$
$\qquad$ ,
$\qquad$ , $\qquad$ , _ , , $\qquad$ , Or $\qquad$ .

Clue 2

+ 二 ■■


Pof could be $\qquad$ , $\qquad$ , $\qquad$
$\qquad$ , $\qquad$ $\longrightarrow$, ,
$\qquad$ , $\qquad$ , Or $\qquad$ .

Clue 3


Who is Pof?

Name
Pif is a secret number.
Clue 1

$$
\pm \text { ■ }
$$



Pif could be $\qquad$
$\qquad$ , $\qquad$
$\qquad$
$\qquad$ , $\qquad$ ,
$\qquad$ , and so on.

Clue 2
Pif can be put on this Minicomputer.


Pif could be $\qquad$ , $\qquad$ , $\qquad$
$\qquad$ , $\qquad$ ,
$\qquad$
, $\qquad$ , Or $\qquad$ .

Clue 3
Pif cannot be put on the Minicomputer using exactly two checkers (positive or negative).

Who is Pif? $\qquad$

Name

## N30 *

Label the dots.



Use a ruler to locate $\frac{2}{6}$ and $\frac{5}{6}$.


Use a ruler to locate $\frac{1}{4}, \frac{3}{4}, \frac{7}{4}$, and $\frac{8}{4}$.


Name
N30 **


Write one of these fractions in each of the boxes.

$$
\begin{array}{llll}
\frac{8}{3} & \frac{7}{9} & \frac{19}{11} & \frac{17}{5}
\end{array}
$$

$$
0<\square<1<\square<2
$$

$$
2<\square<3<\square<4
$$

Name

## N30 ***

Use a ruler to locate 2 on this number line.

Use a ruler to locate 0 on this number line.


Name
N31 *

On the Binary Abacus

Complete.


## Name

N31 **
Last Sunday, Nabu wrote " 30 " in his notebook. Which cousins did he invite? $\qquad$


On another day he wrote " 75 " in his notebook. Which cousins did he invite? $\qquad$


On the day Nabu wrote " 150 " in his notebook, which cousins did he invite?


On the day Nabu wrote " 200 " in his notebook, which cousins did he invite? $\qquad$


Name

## N31 ***

Toh is a secret number.

## Clue 1

Toh can be put on this part of the binary abacus using at most one checker on each board.


Toh could be $\qquad$ , $\qquad$ , $\qquad$ , $\qquad$ , $\qquad$ , $\qquad$ ,
$\qquad$ , or $\qquad$ .

Clue 2

$$
\pm \Rightarrow
$$



Toh could be $\qquad$ or $\qquad$ .

Clue 3

If you multiply Toh by 28, you get a square number.

Name

## Telephone Game

Label the dots.


Name

## N32 **

## Telephone Game

Label the dots.


Name
N32 ***

## Telephone Game

Label the dots.


Name
N32 ****

## Telephone Game



Name
N33(a)

## Telephone Game

Zip is a secret number.
Clue 1
Zip is in this picture. The dot for Zip is not labeled.


Zip could be $\qquad$ , $\qquad$ , , $\qquad$ , or $\qquad$ .

## Name

Clue 2

8 can call Zip for 20¢.

Who is Zip?
or

Name
N34 *

Draw as many red arrows as you can between these dots.


Name


Clue 1


Bim could be $\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$ , and so on.

Clue 2
Bim can be put on this Minicomputer using exactly one of these checkers:
(2) (3)
(4)
(5)
(6)
(7)
(8)
(9)


Bim could be $\qquad$ or $\qquad$ .

Clue 3


Name
N34 ***

Label the dots. Many solutions are possible.



Name
Clue 1


Tim could be $\qquad$ , $\qquad$
$\qquad$
, $\qquad$ , $\qquad$
$\qquad$
$\qquad$
$\qquad$ , and so on.

Clue 2

Tim is between 200 and 240 .

Tim could be $\qquad$ , $\qquad$ , or $\qquad$ .

Clue 3


Who is Tim?
$\square$
Coventry Middle School Sports Saturday

| Schedule |  |
| :--- | :--- |
| 1:00-2:30 p.m. | $3: 00-4: 30$ p.m. |
| Swimming | Basketball |
| Ping-Pong <br> Kickball | Volleyball |

Each student may select one sport from each time period. They sign-up on the following chart.


Which two sports did Alex select? $\qquad$ and $\qquad$
Which two sports did Lena select? $\qquad$ and $\qquad$
Troy wants to play ping-pong and volleyball. Write his name in the proper place.
Shalin wants to play kickball and basketball. Write her name in the proper place.

Name


Kif is the ending number of an arrow road that starts at 3 and has exactly two arrows (blue, red, or black).


3

Kif could be $\qquad$
$\qquad$
$\qquad$ , $\qquad$ , $\longrightarrow$,
$\qquad$ .

Name


How many paths can you choose to go...
... from $A$ to $C$ ?
... from $X$ to $Z$ ?

... from E to $G$ ?
... from J to L?


Name


How many paths can you choose to go...
... from $A$ to $C$ ?
... from $X$ to $Z$ ?


Name


How many paths can you choose to go...


Name $\qquad$ L6 ****

How many paths can you choose to go...



## Use the clues in the picture to cross out labels that the strings cannot have. Some are done for you. Then label the strings.

| The RED label is one of these: | The BLUE label is one of these: |
| :---: | :---: |
| Multor 0 | Multor |
| Muliplosof 3 | Mulimor 3 |
| Multiples of 4 | Multiples of 4 |
| Multiples of 5 | Multiples of 5 |
| Multiples of 10 | Mulicoor 10 |
| Odd Numbers | Odd Numbers |
| Positive Prime Numbers | Positive Prime Numbers |
| Greater than 50 | Greater than 50 |
| Less than 50 | Less than 50 |
| Greater 10 | Greater than $\widehat{10}$ |
| Less than $\widehat{10}$ | Less than $\widehat{10}$ |
| Positive | Positive isors of 12 |
| Positive Divisors of 18 | Positive Divisors of 18 |
| Positive Divisors of 20 | Positive Divisors of 20 |
| Positive Divisors of 24 | Positive Divisors of 24 |
| Positive | Positive sors of 27 |



Name $\qquad$

## Use the clues in the picture to cross out labels that the strings cannot have. Some are done for you. Then label the strings.

| The RED label is one of these: | The BLUE label is one of these: |
| :---: | :---: |
| Multior | Muluor |
| Muliplos 3 | Mulior 3 |
| Multiples of 4 | Multiples of 4 |
| Multiples of 5 | Multiples of 5 |
| Multiples of 10 | Multiples of 10 |
| Odd Numbers | Odd Numbers |
| Positive Prime Numbers | Positive Prime Numbers |
| Greater than 50 | Greater than 50 |
| Less than 50 | Less than 50 |
| Greater than $\widehat{10}$ | Greater than $\widehat{10}$ |
| Less than $\widehat{10}$ | Less than $\widehat{10}$ |
| Positive Divisors of 12 | Positive Divisors of 12 |
| Positive Divisors of 18 | Positive Divisors of 18 |
| Positive Divisors of 20 | Positive Divisors of 20 |
| Positive Divisors of 24 | Positive Divisors of 24 |
| Positive Divisors of 27 | Positive Divisors of 27 |



## L9 ***

## Use the clues in the picture to cross out labels that the strings cannot have. Then label the strings.

| The RED label is <br> one of these: | The BLUE label is <br> one of these: |
| :---: | :---: |
| Multiples of 2 | Multiples of 2 |
| Multiples of 3 | Multiples of 3 |
| Multiples of 4 | Multiples of 4 |
| Multiples of 5 | Multiples of 5 |
| Multiples of 10 | Multiples of 10 |
| Odd Numbers | Odd Numbers |
| Positive Prime | Positive Prime |
| Numbers | Numbers |
| Greater than 50 | Greater than 50 |
| Less than 50 | Less than 50 |
| Greater than $\widehat{10}$ | Greater than $\widehat{10}$ |
| Less than $\widehat{10}$ | Less than $\widehat{10}$ |
| Positive Divisors of 12 | Positive Divisors of 12 |
| Positive Divisors of 18 | Positive Divisors of 18 |
| Positive Divisors of 20 | Positive Divisors of 20 |
| Positive Divisors of 24 | Positive Divisors of 24 |
| Positive Divisors of 27 | Positive Divisors of 27 |



## L9 ****

## Use the clues in the picture to cross out labels that the strings cannot have. The hatching is a clue. Then label the strings.

| The RED label is <br> one of these: | The BLUE label is <br> one of these: |
| :---: | :---: |
| Multiples of 2 | Multiples of 2 |
| Multiples of 3 | Multiples of 3 |
| Multiples of 4 | Multiples of 4 |
| Multiples of 5 | Multiples of 5 |
| Multiples of 10 | Multiples of 10 |
| Odd Numbers | Odd Numbers |
| Positive Prime | Positive Prime |
| Numbers | Numbers |
| Greater than 50 | Greater than 50 |
| Less than 50 | Less than 50 |
| Greater than $\widehat{10}$ | Greater than $\widehat{10}$ |
| Less than $\widehat{10}$ | Less than $\widehat{10}$ |
| Positive Divisors of 12 | Positive Divisors of 12 |
| Positive Divisors of 18 | Positive Divisors of 18 |
| Positive Divisors of 20 | Positive Divisors of 20 |
| Positive Divisors of 24 | Positive Divisors of 24 |
| Positive Divisors of 27 | Positive Divisors of 27 |



## Name

## G1 <br> *

Draw a two-piece zigzag starting in one circle and ending in the other. Make one piece 5 cm long and the other 7 cm long.


Draw a three-piece zigzag starting in one circle and ending in the other. The lengths of the pieces must be $2 \mathrm{~cm}, 4 \mathrm{~cm}$, and 8 cm .


Draw a three-piece zigzag starting in one circle and ending in the other. The lengths of the pieces must be $4.8 \mathrm{~cm}, 5.9 \mathrm{~cm}$, and 6.2 cm .


## G1 $* *$

Draw a zigzag from circle A to circle B to circle C. Use each of these lengths exactly once:
$5 \mathrm{~cm} \quad 6 \mathrm{~cm} \quad 7 \mathrm{~cm} \quad 8 \mathrm{~cm}$




Draw a zigzag from circle A to circle B to circle C. Use each of these lengths exactly once:
$1 \mathrm{~cm} \quad 2 \mathrm{~cm} \quad 3 \mathrm{~cm} \quad 6 \mathrm{~cm} \quad 9 \mathrm{~cm} \quad 11 \mathrm{~cm}$
$\bigcirc A$

c


Name


Draw a zigzag from circle A to circle B to circle C. Use each of these lengths exactly once.
4.3 cm
5.5 cm
7.2 cm
8.4 cm


〇B

Draw a zigzag from circle A to circle B to circle C. Use each of these lengths exactly once.
$2.5 \mathrm{~cm} \quad 3.6 \mathrm{~cm} \quad 4.9 \mathrm{~cm} \quad 10.4 \mathrm{~cm} \quad 11.2 \mathrm{~cm}$
A $\bigcirc$
$\bigcirc \mathrm{c}$

## Name

## G2(a)

For each triangle, draw the smallest rectangle that surrounds it and that has sides along the grid lines. Is the area of the triangle half of the area of the rectangle? Write yes or no near the triangle.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1 cm |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| A |  | - |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | - | C |
|  |  |  |  |  |  |  |  |  | - |  |  | , |  |  |  |  |
|  |  | $\square$ |  |  |  |  |  |  |  | B |  |  |  | $\square$ |  |  |
| D | D |  |  |  |  |  |  |  |  |  |  |  |  | F |  |  |
|  |  |  |  |  |  | , |  |  | $\bigcirc$ |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | - |  |  |  | , |  |  |  |
| F |  |  |  | $\bigcirc$ |  |  |  |  | - |  |  |  |  |  |  |  |
|  |  |  |  |  |  | E |  |  |  |  |  |  |  | $\square$ |  |  |
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|  |  |  |  |  |  |  |  | G |  |  |  |  |  |  |  |  |
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Name
G2(b)

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Name

## G3

Find the area of this triangle. Use the method of drawing a rectangle around it that has twice its area.


Area of the rectangle is $\qquad$
Area of the triangle is $\qquad$

Name

## G4 *

Project each point onto the floor parallel to the wall. Draw a red arrow from each point to its image. One is done for you.



## G4 **

Each point on the floor is the image of many points when they are projected onto the floor parallel to the wall. An example of three points with the same image point on the floor is given here.
For each point on the floor, find many points all having this point as its image. Draw a blue arrow from a point to its image.



Name

## G5 <br> *

Project each point onto the floor parallel to the wall. Then find some other points that have the same image as Max.



## G5 <br> **

Project the three line segments onto the floor parallel to the wall. Use a different color for the image of each line segment.



Name

## G5 $\quad * * *$

Project each question mark onto the floor parallel to the wall. Use different colors for the two images. Be careful, each question mark has two pieces.



Name

## G5 ****

Project this graceful curve onto the floor parallel to the wall. Show the image in red.



Name

## G6

Find couples equipollent to the red couple and color them red.


Name

## G6 *

Project the equipollent couples shown in red onto the floor parallel to the wall. Show that the images are equipollent couples.


Floor

Name

## G6 **

Project the equipollent couples shown in red onto the floor parallel to the wall. Show that the images are equipollent couples.


Name

## G6 $\quad * * *$

Project the equipollent couples shown in red onto the floor parallel to the wall. Show that the images are equipollent couples.


Floor

Name

## G7 <br> *

Color all shapes of area $1.5 \mathrm{~cm}^{2}$ with the same color. Use another color to color all shapes of area $2.5 \mathrm{~cm}^{2}$.



Use one color to color all shapes of area $1.5 \mathrm{~cm}^{2}$.
Use another color to color all shapes of area $2 \mathrm{~cm}^{2}$.
Use a third color to color all shapes of area $2.5 \mathrm{~cm}^{2}$.


Name
G7 ***


## Name

## G8

Find the area of the red triangle by first finding the areas of the blue triangles.

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|  |  |  | cm |  |  |  |  |  |  | 7 |  |  |  |  |  |  |  |  |
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|  |  |  |  |  | -Ar | rea o | of the | red | triang | gle |  | $\begin{array}{r} \mid \\ \mathrm{cm}^{2} \\ \hline \end{array}$ |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | gie. |  |  |  |  |  |  |  |  |

## Name

Find the areas of the red triangles by first finding the areas of the blue triangles.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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## G8 ***

Find the areas of the red and blue pieces in each picture.


Name
G12(a)
Measure to the nearest millimeter.


The length of this line segment is $\qquad$ $\mathrm{cm}=$ $\qquad$ mm.


The total length of the zigzag is $\qquad$ $\mathrm{cm}=$ $\qquad$ mm.

Name
G12(b)
Measure to the nearest millimeter.


The total length of the zigzag is $\qquad$ $\mathrm{cm}=$ $\qquad$ mm.


Find a route going to each town exactly once. Make your route as short as possible.


How long is your route? $\qquad$
Is it less than 24 long? $\qquad$

Name

## G13 **

Find a route going to each town exactly once. Make your route as short as possible.


How long is your route?

## G13 ***

Find a round trip going to each town exactly once. Make your trip as short as possible.


How long is your round trip?

## G13 ****

Find the shortest possible round trip going to each city exactly once.


How long is the shortest possible round trip?

Name
W4(a)
Label the dots. If a cord picture is impossible, draw an X through it.

## distance less than 10

## distance 10 or more than 10



Name
W4(b)
Label the dots. If a cord picture is impossible, draw an X through it.

## distance less than 10

## distance 10 or more than 10



Name
W4(c)
Label the dots. If a cord picture is impossible, draw an X through it.

## distance less than 10

## distance 10 or more than 10




Name


Complete.


Name


Put any number you wish on each Minicomputer using exactly one dime and three pennies.


Name


Put these numbers on the Minicomputer using exactly one dime and three pennies.


Name
W10

Label the dots.

$$
2 x \quad+1
$$



Name

## W11 *

Complete.

## On the binary snake



Name

## W11 **

Put each number on the binary snake. Use at most one checker on each board.


Name

## W11 ***

Clip is a secret number.
Clue 1
Clip is a positive prime number.
Clip could be $\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$ , $\qquad$
$\qquad$
$\qquad$ , , $\qquad$ , $\qquad$ , $\qquad$ , $\qquad$ , and so on.

Clue 2 Clip can be put on this binary snake using exactly two checkers (positive or negative).


Clip could be $\qquad$ , $\qquad$ , _ , $\qquad$ , $\qquad$ , or $\qquad$ .

Clue 3

$$
\div
$$



Clip could be $\qquad$ , $\qquad$ , or $\qquad$ .

Clue 4


Who is Clip? $\qquad$

