# 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

_2
_2

#### **G** Worksheets

G1	G5	G8
G2	G6	G12
G3	G7	G13
G4		

#### W Worksheets

W4	W10
W9	W11

ame
ame

N1

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	N1	**

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	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.



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? \_

Ν	a	n	е
---	---	---	---

N1 **\*\*\*** 

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.

4 000 ●

How many large boxes will they receive? \_\_\_\_\_

How many extra small boxes will they receive? \_\_\_\_\_

How many balls will be left to package separately? \_\_\_\_\_

\*

#### Name\_\_\_\_\_

#### What number is on the Minicomputer?



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

N2

\*\*



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.



#### Name\_\_\_

Put each number on the Minicomputer using exactly two of these checkers:



N2 \*\*\*\*

N3

Label the dots.



\*

N3

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.



N4

Trade <sup>(i)</sup>-checkers for regular checkers. Complete the number sentences.



Name	N4	*

Draw as many red arrows as possible in this picture.



Name	N4	**

Draw as many red arrows as possible in this picture.



N4

\*\*\*

Dote is a secret number.



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





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

N5

\*



Pair tags for numbers that are equal.



Label the marks on each number line.



Complete.



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



each number accurately.



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

Name	N5	****

Г

Label the dots.



Label each arrow + or – some whole number.



Fill in the boxes to give subtraction facts for 35.



N7

\*\*\*

Pick is a secret number.



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



What number is on the Minicomputer?



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.



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.



\*



#### Zip is a secret number.



N10

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



Use the arrow picture to solve these problems.

20 x 6 =	60 ÷ 10 =
20 x 12 =	120 ÷ 10 =
20 x 24 =	1200 ÷ 10 =

N10

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



Use the arrow picture to solve these problems.



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 ÷ 10 =	9 x 0.21 =
18.9 ÷ 30 =	6.3 ÷ 9 =
63 ÷ 30 =	0.63 ÷ 3 =
21 ÷ 30 =	0.63 ÷ 9 =

N11(a)

Clue 3

Zip is in this picture.



Zip could be \_\_\_\_\_, \_\_\_\_, \_\_\_\_, or \_\_\_\_\_.

N11(b)

Clue 4

Zip is one of these numbers.



Mot is a secret number.



Mot is \_\_\_\_\_.
N11(d)

Ark is a secret number.

Clue 1 Ark can be put on this Minicomputer with just a ④-checker. Ark could be \_\_\_\_\_, \_\_\_\_, \_\_\_\_, \_\_\_\_, \_\_\_\_, \_\_\_\_, or \_\_\_\_. Clue 2 If you put Ark on the calculator display and press  $\pm \equiv \equiv \equiv \dots$ , 24 will appear. Ark could be \_\_\_\_\_, \_\_\_\_, \_\_\_\_, or \_\_\_\_\_. Ark is in this arrow picture. Clue 3 +0.6Ark is \_\_\_\_\_.

Name
------

N12

Build an arrow road from 1 295 to the least possible positive number using arrows for -400, -40, and -4.

-400 -40 -4 1295

What is your ending number? \_\_\_\_\_

How many arrows did you use? \_\_\_\_\_

Name	N12	**

Complete the table.



Bif	Jif	Mif
24		
240		
	18	
	13	
		7
		70
		9.5
		3.25

N12 \*\*\*

Roc is a secret number.



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



Name			[	N14	*
	<b>58</b> •	+5	5] =] •••	• Ort	
Ort could	be any o	f four num	pers listed	below. Circle	e them.
	72	23	88	163	
	73	90	358	48	
		+5	5 = •••		
_	Tro •	,		<b></b> • 31	
Tro could	l be any o	f four numl	bers listed	below. Circle	e them.
	21	51	-31	6	
	19	-19	-34	66	

Label the dots. Many solutions are possible.



N14 \*\*\*

Jot is a secret number.



Who is Jot? \_\_\_\_\_

6

#### Fo is a secret number.



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

What is the least positive number Fo could be? \_\_\_\_\_

What is the greatest negative number Fo could be? \_\_\_\_\_

Clue
------

Fo can be put on this Minicomputer using exactly four regular checkers.



\*

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

2 × 98	2 × 99	2 × 98.6
Complete.		
98	99	98.6
× 2	× 2	× 2

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

4 × 845.9	4 × 846	4 × 845
Complete.		
845.9	846	845
× 4	× 4	× 4

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

8 × 2 8 × 1.24		8 × I
Complete.		
2	1.24	
× 8	× 8	× 8

Name	N15	**

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

7 × 68	7 × 67.50	7 × 69
Complete.		
68	67.50	69
× 7	<u>×7</u>	× 7

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

6×2.97	6 × 2	6 × 3
Complete.		
2.97	2	3
× 6	× 6	× 6

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

9×23.65	9×23	9×23.47	9×24
Complete.			
23.65	23	23.47	24
× 9	x 9	× 9	× 9

Name	N16	*

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.



Name	N16	**

Label the dots.



Place these numbers in the string picture.



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



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.

Angie
Darren Cindy

What fraction of the lawn does each child mow?

Angie \_\_\_\_\_ Darren \_\_\_\_\_ Cindy \_\_\_\_\_

N16 \*\*\*\*

# **4** < Lea < **5**

Fill in the boxes for fractions Lea could be.



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

Place each fraction in a box.



N17

\*

Use this rule for red arrows...





N17

\*\*

Name\_\_\_\_\_

Use this rule for red arrows...





N17 **\*\*\*** 

Use this rule for red arrows...





N17 \*\*\*\*

Use this rule for blue arrows...





N19

\*





Val and Hal are secret numbers.

Clue 1

Val is a multiple of 7 between 40 and 80.



N20

\*

#### Label the dots.



Complete these calculations.

1.5 +2.7 $1.5 \pm 0.7 =$ 10.8 +4.9 5.8 - 0.9 =236.7 +95.8 0.7 + 0.8 =56.7 +56.7 2 - 0.7 =

N20

\*\*

Name	N20 ***
Complete.	
10 × 🗌 = 45	1.6 + = 2.5
$2 \div 2 = 0.8$	3 = 0.7
2 = 0.4	$10 \div 10 = 3.2$

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

**I - 0.7** 

Na	me	
----	----	--

N22

\*

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



Draw three +0.5 arrows in green.

Name	N22	**

Pair the tags.

4 1.2 +1.3 -0.8 **8**× ÷2 **4**× ÷2 -0.7 +1.5 +6.8 ÷3 10× 4

Name	N22	***

Complete the chart.



<b>—</b>	-
2×	
÷2	
<b>3</b> ×	
÷3	
-0.9	
-1.4	
+2.6	

$\rightarrow$	$\rightarrow$
	2×
	÷2
	<b>5×</b>
	÷IO
	-7.4
	+7.4

### Name

\*

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



A zookeeper feeds 28 bananas to 7 monkeys.









Complete the chart.



Write at least three names for the gray arrow.

. .

Mi and Fa are two secret whole numbers.



Complete this chart.

Mi				
Fa				
Mi+Fa				

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

Clue 2

# Mi + Fa = 81

Who is Mi? \_\_\_\_\_

Who is Fa? \_\_\_\_\_

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



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? \_\_\_\_\_

N24

\*\*

## $365 \div 5 = 73$

Complete.



Complete.

488 ÷ 8 =	472 ÷ 8 =
520 ÷ 8 =	÷ 8 = 57
560 ÷ 8 =	$\rightarrow 8 = 54$





Name

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?

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? \_\_\_\_\_

If he rides 6 hours per day, about how many days will he travel?



The distance around the Earth is about 45 000 km. If an airplane travels 1 300 km per hour, calculate the number of hours of flying time it takes to fly around the world. You may use an arrow road.

### 45 000 km

About how many hours? \_\_\_\_\_

Label the dots. Many solutions are possible.


Tix is a secret number.



Clue 3

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



Label the dots. Many solutions are possible.



#### Tah is a secret number.



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

Pof is a secret number.

#### Clue 1

Pof can be put on this Minicomputer using exactly one regular checker.





#### Pif is a secret number.



Clue 3

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

Who is Pif? \_\_\_\_\_

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  $\frac{8}{4}$ .

0 I 2



Write one of these fractions in each of the boxes.



Name	N30	***



Use a ruler to locate 0 on this number line.





N31

Last Sunday, Nabu wrote "30" in his notebook. Which cousins did he invite?



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

	h	g	f	е	d	С	b	а

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

	h	g	f	е	d	С	b	а

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



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.



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

Who is Toh? \_\_\_\_\_

# **Telephone Game**

Label the dots.







### **Telephone Game**

Label the dots.



### **Telephone Game**



#### **Telephone Game**

N33(a)

Zip is a secret number.

Clue 1

Zip is in this picture. The dot for Zip is not labeled.



N33(b)

Clue 2

8 can call Zip for 20¢.

8

Who is Zip? \_\_\_\_\_ or \_\_\_\_\_.

Name	N34

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

Г

\*





Who is Bim? \_\_\_\_\_

Label the dots. Many solutions are possible.





### Coventry Middle School Sports Saturday

Schedule				
1:00–2:30 p.m.	3:00–4:30 p.m.			
Swimming Ping-Pong Kickball	Basketball Volleyball			

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



 Which two sports did Alex select? \_\_\_\_\_\_ and \_\_\_\_\_

 Which two sports did Lena select? \_\_\_\_\_\_ and \_\_\_\_\_

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.

L2 **\*\*\*** 

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



Kif could be \_\_\_\_\_, \_\_\_\_, \_\_\_\_, \_\_\_\_, \_\_\_\_, \_\_\_\_, \_\_\_\_,

\_\_\_\_\_, or \_\_\_\_\_.

How many paths can you choose to go...

... from A to C? ... from X to Z?





L6

... from E to G?

... from J to L?



L6

\*\*

How many paths can you choose to go...

... from A to C?

... from X to Z?



L6

\*\*\*

How many paths can you choose to go...



L6 **\*\*\*\*** 

How many paths can you choose to go...



L9

\*

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



L9

\*\*

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



L9

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



Name\_\_\_\_\_

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.



Name

\*

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 4.8 cm, 5.9 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:



Draw a zigzag from circle A to circle B to circle C. Use each of these lengths exactly once:



G1 **\*\*\*** 

Draw a zigzag from circle A to circle B to circle C. Use each of these lengths exactly once.



Draw a zigzag from circle A to circle B to circle C. Use each of these lengths exactly once.



Β

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.




Name.
-------

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  $\_\_\_cm^2$ .

Area of the triangle is  $\underline{\rm cm}^2$ .

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.





Ν	a	m	ne
---	---	---	----

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.





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





\*\*

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





Na	me
----	----



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.





G5 **\*\*\*\*** 

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





G6

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



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



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





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



G7

Color all shapes of area  $1.5 \text{ cm}^2$  with the same color.

Use another color to color all shapes of area  $2.5 \text{ cm}^2$ .





Use one color to color all shapes of area  $1.5 \text{ cm}^2$ .

Use another color to color all shapes of area  $2 \text{ cm}^2$ .

Use a third color to color all shapes of area  $2.5 \text{ cm}^2$ .





Name

Use one color to color all shapes of area 2  $\rm cm^2$ .

Use another color to color all shapes of area 3 cm<sup>2</sup>.

Use a third color to color all shapes of area 3.5 cm<sup>2</sup>.



G7



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

G8



\*

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



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







The total length of the zigzag is \_\_\_\_\_ cm = \_\_\_\_ mm.

G12(b)

Name\_\_\_\_\_

Measure to the nearest millimeter.



The total length of the zigzag is \_\_\_\_\_ cm = \_\_\_\_ mm.

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



How long is your route? \_\_\_\_\_

Is it less than 24 long? \_\_\_\_\_

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



How long is your route? \_\_\_\_\_

Name	G13	***

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



G13 \*\*\*\*

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



How long is the shortest possible round trip? \_\_\_\_\_

Name



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



Name\_



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


Name\_



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





Name\_\_\_\_

W9

\*

## Complete.



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



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

W9

\*\*\*



## Name\_

W10

Label the dots.



Complete.

## On the binary snake



W11

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



Name\_\_\_\_\_

Clip is a secret number.

