

Directions: Repeat the first activity with the numbers below. Estimate each answer. After, discuss if you think that the exact answer is more or less than the estimate you gave.

11. $3 \frac{1}{8} + 2 \frac{4}{5}$

12. $\frac{9}{10} + 2 \frac{7}{8}$

13. $1 \frac{3}{5} + 5 \frac{3}{4} + 2 \frac{1}{8}$

14. $6 \frac{1}{4} - 2 \frac{1}{3}$

15. $1 \frac{1}{12} - \frac{3}{4}$

16. $3 \frac{1}{2} - \frac{9}{10}$

EQUIVALENT-FRACTION CONCEPTS: Different Fillers

Directions: For each fraction bar, use your own fraction pieces to find as many single-fraction names for the region as possible. An extra set of fraction bars has been provided.



Names: _____



Names: _____



Names: _____

Directions: Write about the ideas or patterns you may have noticed in finding the names.

Name _____

Date _____

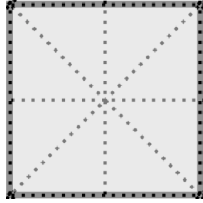


EQUIVALENT-FRACTION CONCEPTS: Dot Paper Equivalencies

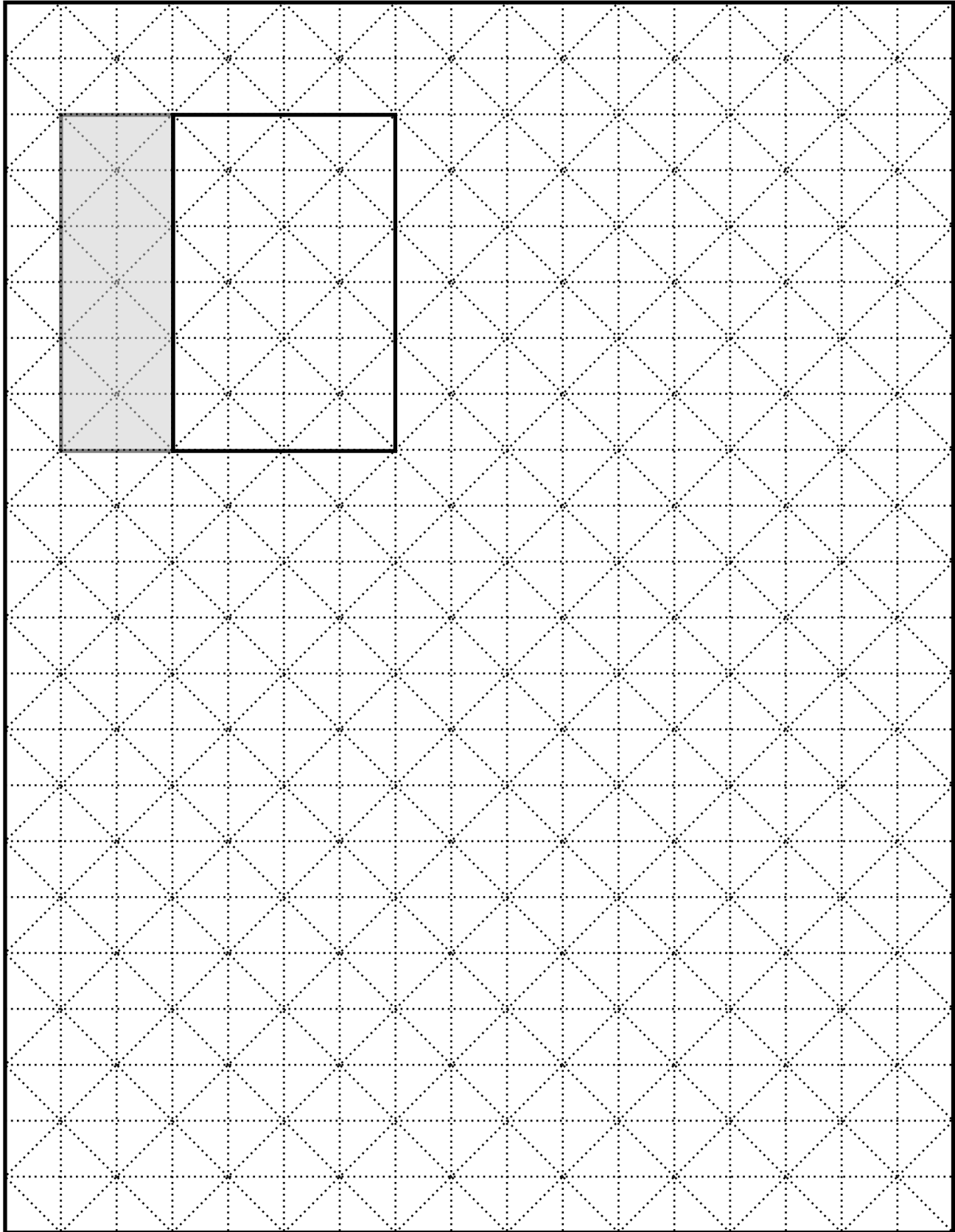
Directions: The teacher has created a worksheet using a portion of isometric paper. On the grid, the teacher has drawn the outline of a region and designated it as one whole. The teacher has drawn and lightly shaded a part of the region within the whole.

The task is to use different parts of the whole determined by the grid to find names for the part. In the space below, draw a picture of the unit fractional part that you use for each fraction name.

$1/3 = 3/9$



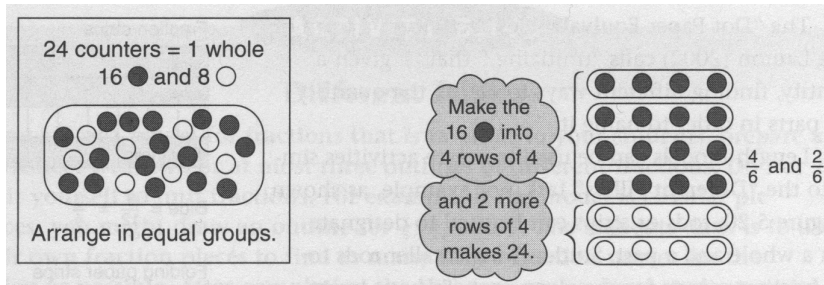
$= 1/9$



EQUIVALENT-FRACTION CONCEPTS: Group the Counters, Find the Names

Directions: Set out a specific number of counters into two colors. The task is to group the counters into different fractional parts of the whole and use the parts to create fraction names for the colored counters. Record your different groupings and explain how you found the fraction names.

1. 24 counters (makes up the whole), 16 of one color & 8 of another color



2. 32 counters (makes up the whole), 20 of one color & 12 of another color

EQUIVALENT-FRACTION CONCEPTS: Missing-Number Equivalencies

Directions: Find the missing number and explain your solution. Show your work on the attached piece of paper.

1. $\frac{5}{3} = \frac{\square}{6}$ Missing Number: _____

Explanation: _____

2. $\frac{2}{3} = \frac{6}{\square}$ Missing Number: _____

Explanation: _____

3. $\frac{8}{12} = \frac{\square}{3}$ Missing Number: _____

Explanation: _____

4. $\frac{9}{12} = \frac{3}{\square}$ Missing Number: _____

Explanation: _____

1.	2.
3.	4.

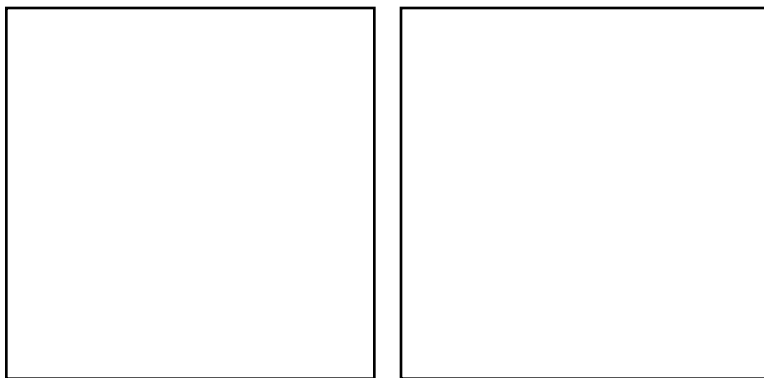
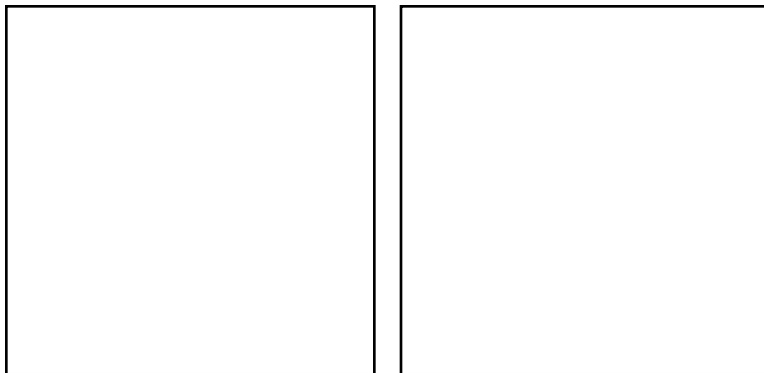
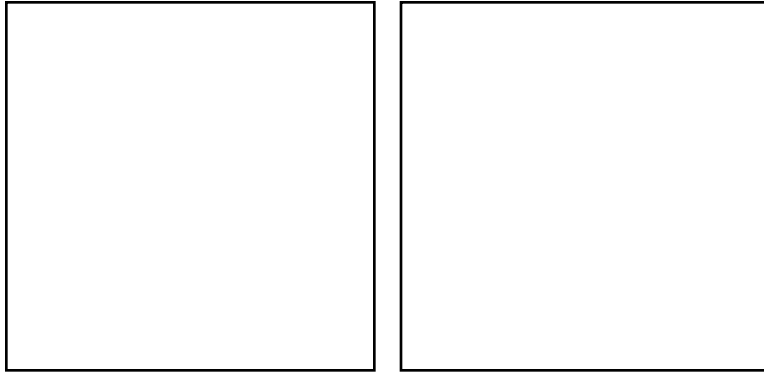
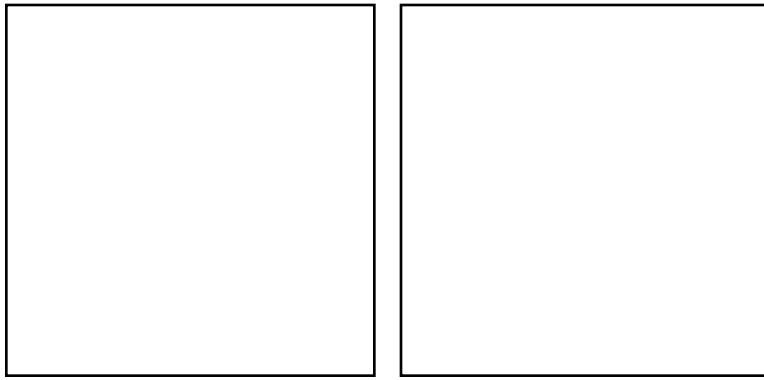
DEVELOPING AN EQUIVALENT-FRACTION ALGORITHM: Slicing Squares

Directions: The teacher will give you a worksheet with four squares in a row. Shade in the same fraction in each square using vertical dividing guides. For example, slice each square in fourths and shade three-fourths.

Next, slice each square into an equal number of horizontal slices. Each square is sliced with a different number of slices, using anywhere from one to eight slices. For each sliced square, write an equation showing the equivalent fraction.

1. After, examine your four equations and the drawings and challenge yourself to discover any pattern in what you have done.

2. Repeat this activity with four more squares and a different fraction. After, examine your four equations and the drawings and challenge yourself to discover any pattern in what you have done.



2, 7	4, 5	6, 9	15, 45
5, 15	7, 8	1, 6	6, 18
1, 8	3, 4	12, 36	3, 15
16, 32	6, 18	4, 6	5, 10
1, 12	4, 8	5, 9	3, 9
2, 13	5, 20	2, 6	7, 21
3, 6	8, 12	2, 8	4, 16

BASE-TEN FRACTIONS: Expanded Form

Directions: For each fraction, first convert it to expanded form, and then convert it to a decimal.

1. $5 \frac{13}{100} =$ _____

Decimal = _____

2. $7 \frac{22}{100} =$ _____

Decimal = _____

3. $8 \frac{65}{100} =$ _____

Decimal = _____

4. $15 \frac{6}{10} =$ _____

Decimal = _____

5. $23 \frac{33}{100} =$ _____

Decimal = _____

6. $457 \frac{84}{100} =$ _____

Decimal = _____

7. $5 \frac{3}{10} =$ _____

Decimal = _____

8. $5 \frac{268}{1000} =$ _____

Decimal = _____

MAKING THE FRACTION-DECIMAL CONNECTION: Base-Ten Fractions to Decimals

Directions: For each fraction/decimal, shade in the specified amount on the grid paper, circle what you shaded, and then number it according to its problem number. A grid of 100 squares is equal to one whole.

After, write each fraction/decimal in its opposite form.

1. $\frac{3}{10} =$ _____

2. $0.8 =$ _____

3. $0.40 =$ _____

4. $\frac{70}{100} =$ _____

5. $\frac{95}{100} =$ _____

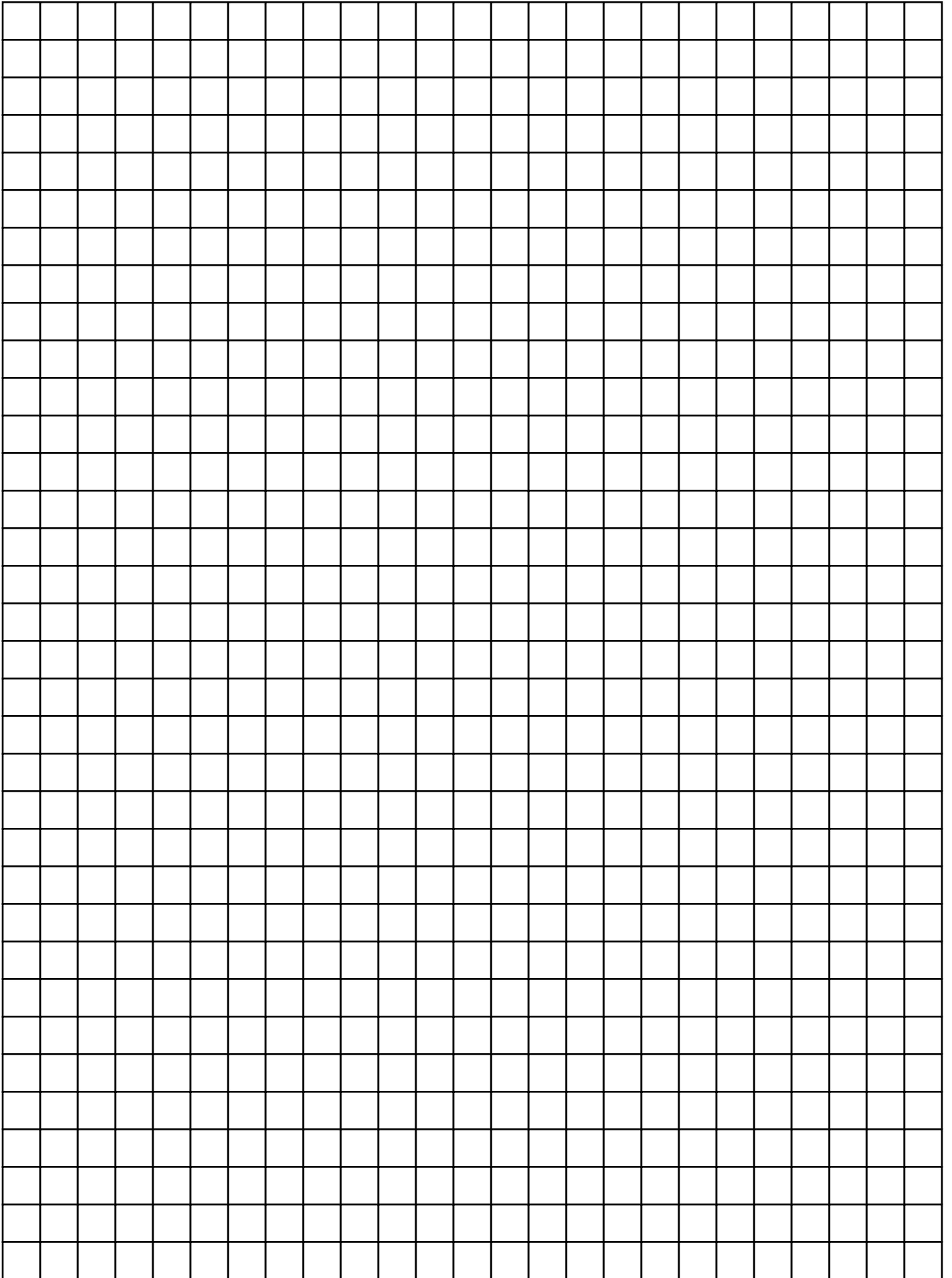
6. $2.2 =$ _____

7. $2\frac{35}{100} =$ _____

8. $3.6 =$ _____

9. $3\frac{60}{100} =$ _____

10. $4.5 =$ _____



MAKING THE FRACTION-DECIMAL CONNECTION: Calculator Decimal Counting

Directions: Complete the following problems, in order.

1. On a calculator, press $+ 0.1 = =$ in order to count by 0.1. When the display shows 0.9, stop and discuss what this means and what the display will look like with the next press.

2. Continue to count to 4 or 5 by tenths. How many presses is it to get from one whole number to the next?

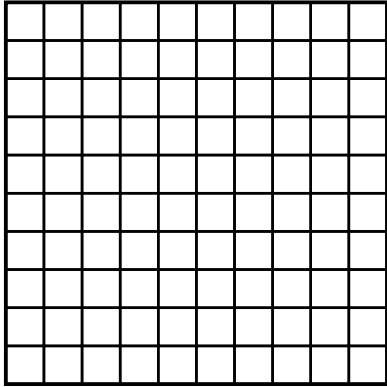
3. When counting by 0.001, how many presses is it to get to 0.01? How many presses is it to get to 1?

4. When counting by 0.01, how many presses is it to get to 1?

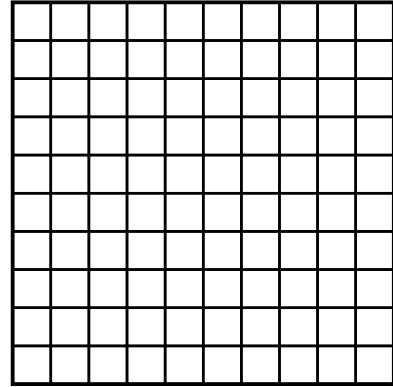
**FAMILIAR FRACTIONS CONNECTED TO DECIMALS: Friendly Fractions to
Decimals**

Directions: For each fraction, shade the fractional amount, identify the decimal number that also represents this amount, and explain your reasoning.

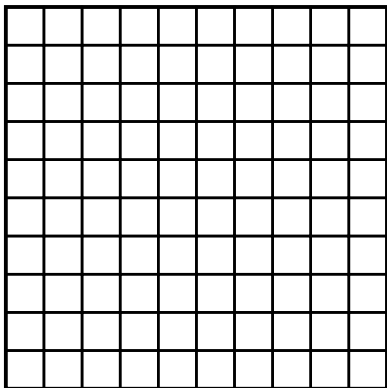
1.
 $\frac{1}{4}$



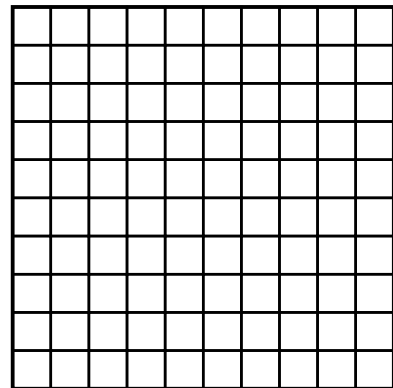
2.
 $\frac{3}{4}$



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



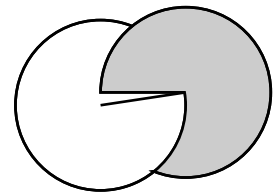
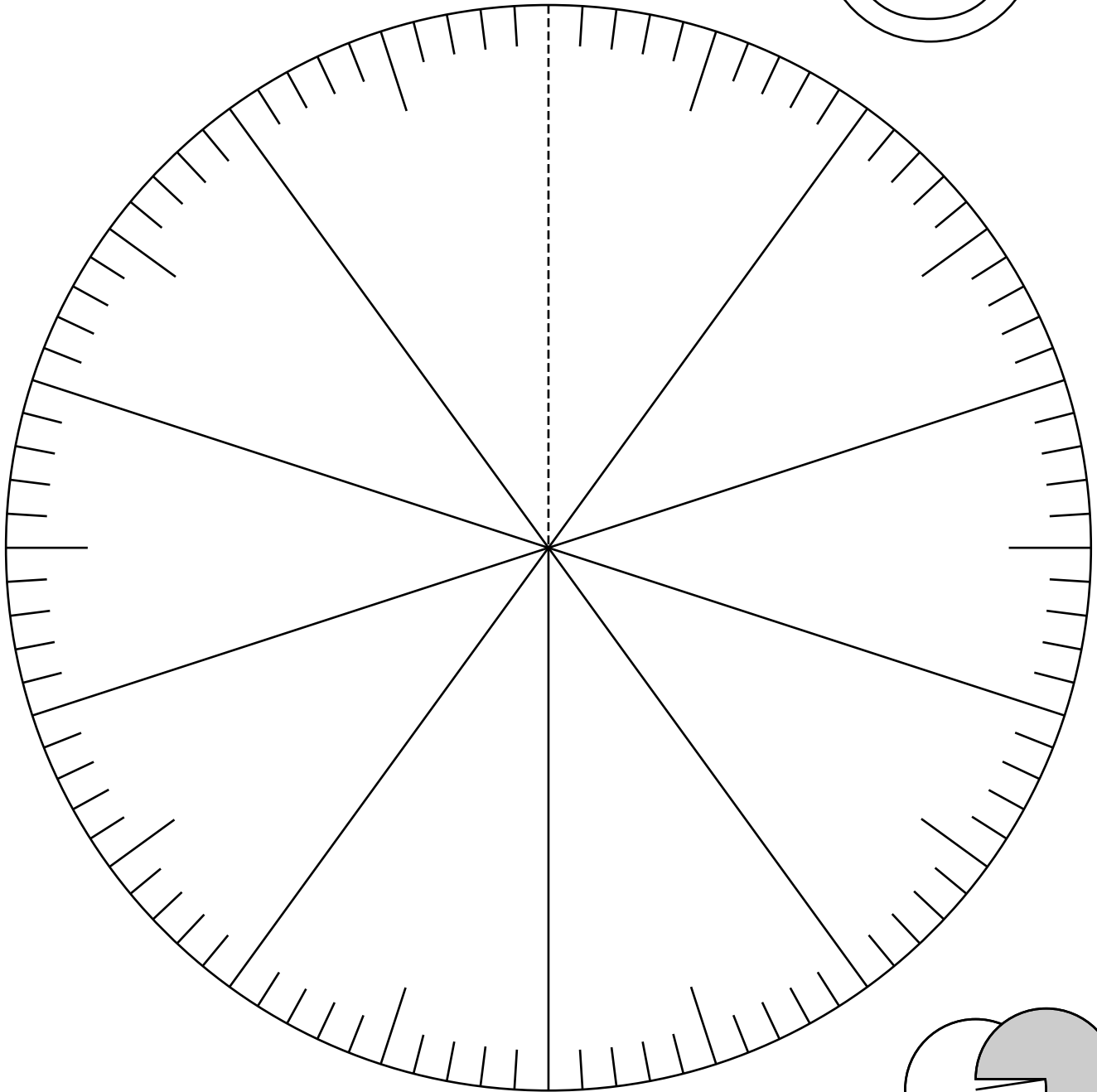
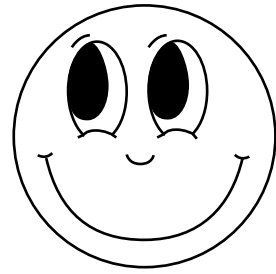
4.
 $\frac{3}{8}$



FAMILIAR FRACTIONS CONNECTED TO DECIMALS: Estimate, Then Verify

Directions: With the blank side of a hundredths disk facing you, adjust the disk to show a particular friendly fraction, for example, $\frac{3}{4}$. Next, turn the disk over and record how many hundredths were in the section you estimated. Finally, record the correct corresponding decimal equivalent.

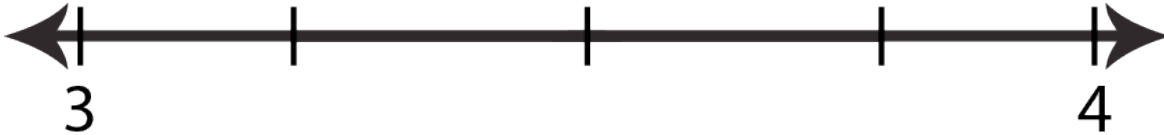
Friendly Fraction	Estimation of Hundredths	Correct Decimal Equivalent
1. $\frac{1}{2}$		
2. $\frac{1}{4}$		
3. $\frac{3}{4}$		
4. $\frac{2}{5}$		
5. $\frac{4}{5}$		
6. $\frac{2}{8}$		
7. $\frac{4}{8}$		
8. $\frac{5}{10}$		
9. $\frac{7}{10}$		
10. $\frac{5}{25}$		
11. $\frac{10}{25}$		
12. $\frac{100}{100}$		



FAMILIAR FRACTIONS CONNECTED TO DECIMALS: Decimals on a Friendly Fraction Line

Directions: For each set of decimals, draw a line from each decimal to where it belongs on the number line. Then, provide the fraction equivalent for each.

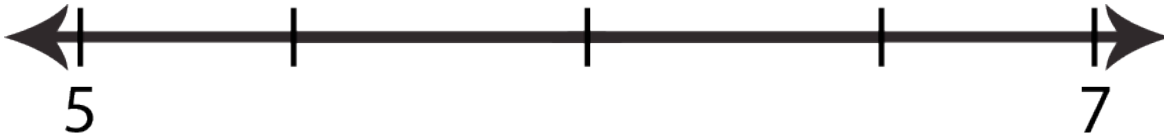
1. 3.5 3.125 3.4 3.75 3.66



$$3.5 = \underline{\hspace{2cm}} \quad 3.125 = \underline{\hspace{2cm}} \quad 3.4 = \underline{\hspace{2cm}}$$

$$3.75 = \underline{\hspace{2cm}} \quad 3.66 = \underline{\hspace{2cm}}$$

2. 6 5.33 6.2 5.9 6.5



$$6 = \underline{\hspace{2cm}} \quad 5.33 = \underline{\hspace{2cm}} \quad 6.2 = \underline{\hspace{2cm}}$$

$$5.9 = \underline{\hspace{2cm}} \quad 6.5 = \underline{\hspace{2cm}}$$

3. 10.5 10.33 10.2 10.02 10.75



$$10.5 = \underline{\hspace{2cm}} \quad 10.33 = \underline{\hspace{2cm}} \quad 10.2 = \underline{\hspace{2cm}}$$

$$10.02 = \underline{\hspace{2cm}} \quad 10.75 = \underline{\hspace{2cm}}$$

APPROXIMATION WITH A NICE FRACTION: Close to a Friendly Fraction

Directions: Decide on a decimal number that is close to each decimal and that also has a friendly fraction equivalent. Write an explanation for your choices.

	Decimal	Close Decimal w/ Fraction Equivalent	Fraction Equivalent
1.	24.8025		

Explanation: _____

2.	6.59		
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Explanation: _____

3.	0.9003		
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Explanation: _____

4.	124.356		
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Explanation: _____

5.	7.7		
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Explanation: _____

Directions: Repeat the previous activity. This time, fill in all three columns. Be prepared to share your work with the class.

Decimal	Close Decimal w/ Fraction Equivalent	Fraction Equivalent
6.		

Explanation: _____

7.		
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Explanation: _____

8.		
----	--	--

Explanation: _____

9.		
----	--	--

Explanation: _____

10.		
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Explanation: _____

APPROXIMATION WITH A NICE FRACTION: Best Match

Directions: Draw a line from each fraction to the decimal that best matches it. For each answer, provide an explanation.

The image shows a matching exercise. It contains four fractions in circles: $\frac{11}{5}$, $2\frac{7}{8}$, $2\frac{1}{3}$, and $2\frac{5}{8}$. It also contains four decimal numbers: 2.41, 2.6271, 2.804, and 2.211.

$\frac{11}{5} =$ _____ Explanation: _____

$2\frac{7}{8} =$ _____ Explanation: _____

$2\frac{1}{3} =$ _____ Explanation: _____

$2\frac{5}{8} =$ _____ Explanation: _____

ORDERING DECIMAL NUMBERS: Line 'Em Up

Directions: First, predict the order of the decimals, from least to most. Next, place each number on the “number line.” Finally, shade in the fractional part of each number on a separate 10 x 10 grid using estimates for the thousandths and ten-thousandths.

2.32

2.4

2.3

2.327

2.36

Prediction from least to most:

