

Using Multiplication to find Equivalent fractions

To find equivalent fractions, you can multiply a fraction by a fraction that is equivalent to 1. Multiply the numerators and the denominators to find an equivalent fraction.

$$\frac{1}{2} \times \frac{2}{2} = \frac{2}{4} \quad \frac{1}{2} \times \frac{3}{3} = \frac{3}{6} \quad \frac{1}{2} \times \frac{4}{4} = \frac{4}{8}$$

$$\frac{2}{3} \times \frac{2}{2} = \frac{4}{6} \quad \frac{2}{3} \times \frac{4}{4} = \frac{8}{12} \quad \frac{2}{3} \times \frac{5}{5} = \frac{10}{15}$$

The answers for these problems will vary.

$$\frac{1}{4} \times \frac{2}{2} = \frac{2}{8} \quad \frac{1}{4} \times \frac{3}{3} = \frac{3}{12} \quad \frac{1}{4} \times \frac{4}{4} = \frac{4}{16}$$

$$\frac{3}{4} \times \frac{2}{2} = \frac{6}{8} \quad \frac{3}{4} \times \frac{3}{3} = \frac{9}{12} \quad \frac{3}{4} \times \frac{4}{4} = \frac{12}{16}$$

Using Division to find Equivalent fractions

To find equivalent fractions, you can divide a fraction by a fraction that is equivalent to 1. Divide the numerators and the denominators to find an equivalent fraction.

$$\frac{6}{12} \div \frac{2}{2} = \frac{3}{6}$$

$$\frac{6}{12} \div \frac{3}{3} = \frac{2}{4}$$

$$\frac{6}{12} \div \frac{6}{6} = \frac{1}{2}$$

$$\frac{6}{10} \div \frac{2}{2} = \frac{3}{5}$$

$$\frac{4}{12} \div \frac{4}{4} = \frac{1}{3}$$

$$\frac{5}{10} \div \frac{5}{5} = \frac{1}{2}$$

$$\frac{2}{8} \div \frac{2}{2} = \frac{1}{4}$$

$$\frac{8}{12} \div \frac{2}{2} = \frac{4}{6}$$

$$\frac{3}{6} \div \frac{3}{3} = \frac{1}{2}$$

$$\frac{3}{12} \div \frac{3}{3} = \frac{1}{4}$$

$$\frac{4}{8} \div \frac{4}{4} = \frac{1}{2}$$

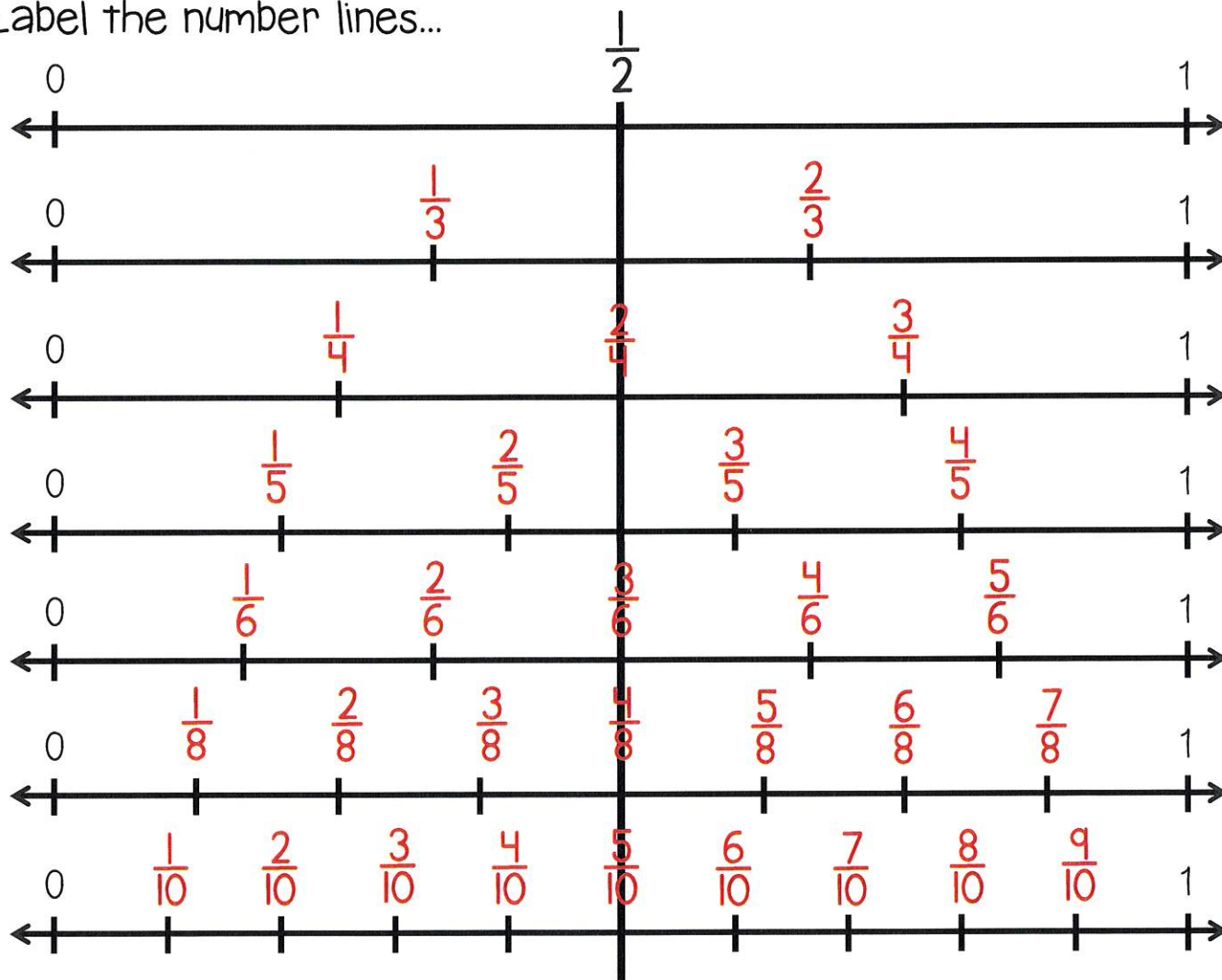
$$\frac{4}{10} \div \frac{2}{2} = \frac{2}{5}$$

Answer Key

Name: _____ Date: _____ Score: _____

Comparing fractions to One-Half

Label the number lines...



Tell whether each fraction is greater than, less than, or equal to $\frac{1}{2}$.

$\frac{2}{3}$ greater than $\frac{3}{5}$ greater than $\frac{3}{8}$ less than

$\frac{2}{4}$ equal to $\frac{2}{6}$ less than $\frac{6}{10}$ greater than

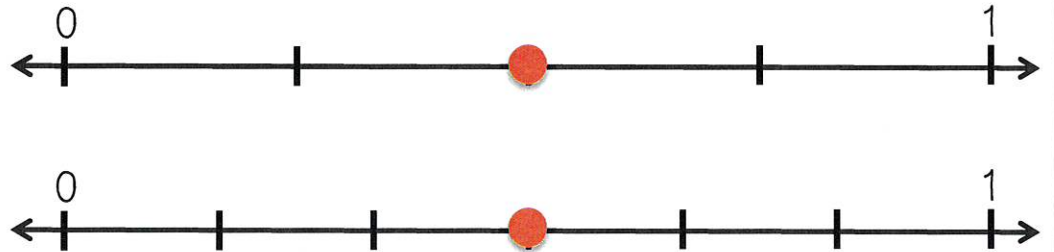
Answer Key

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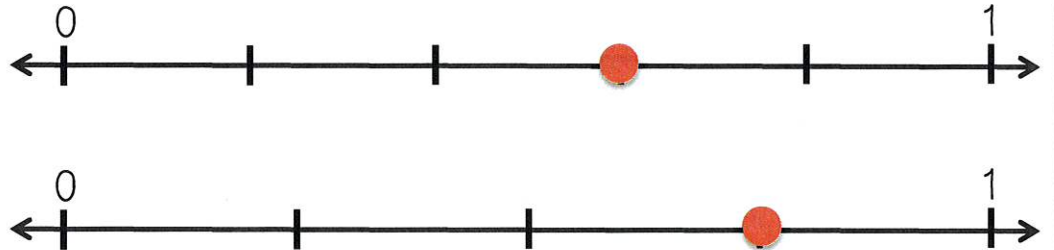
Comparing with Number Lines

{ Use the number lines to represent each fraction. Then compare. }

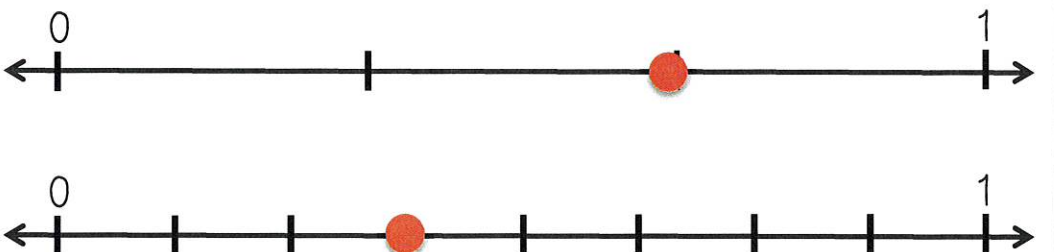
$$\frac{2}{4} = \frac{3}{6}$$



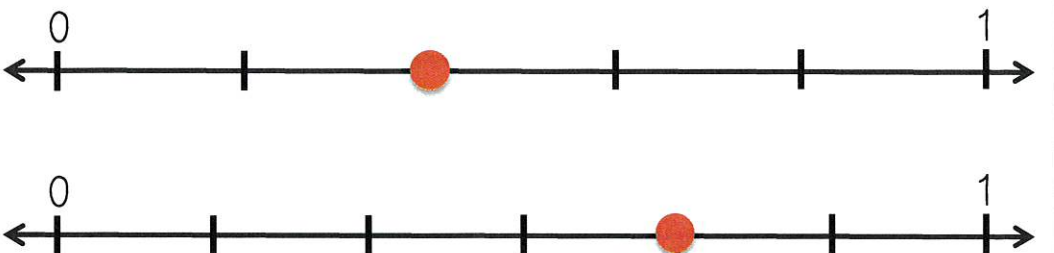
$$\frac{3}{5} < \frac{3}{4}$$



$$\frac{2}{3} > \frac{3}{8}$$



$$\frac{2}{5} < \frac{4}{6}$$

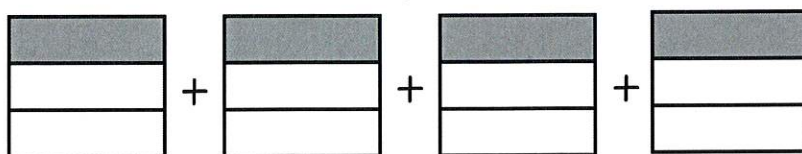


Answer Key

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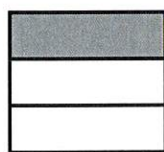
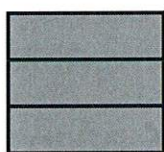
Understanding Fraction Multiplication

When multiplying a fraction by a whole number, you are adding equal parts of a whole a given number of times. For instance, when multiplying $\frac{1}{3}$ by 4, you are adding $\frac{1}{3}$ four times...



$$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} = \frac{4}{3}$$

This is the same as...



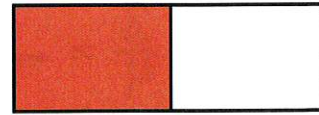
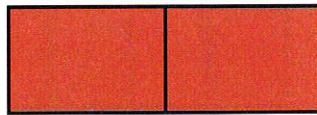
$$4 \times \frac{1}{3} = \frac{4}{3}$$

Use the models to find the product of each.

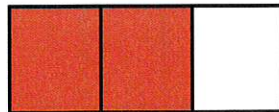
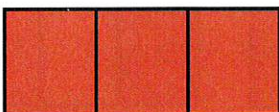
$$6 \times \frac{1}{5} = \frac{6}{5}$$



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



$$5 \times \frac{1}{3} = \frac{5}{3}$$



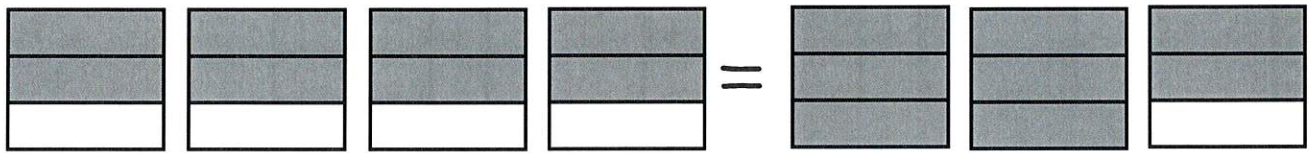
Answer Key

Name: _____ Date: _____ Score: _____

Understanding Fraction Multiplication #2

A fraction such as $\frac{2}{3}$ can be interpreted as $2 \times \frac{1}{3}$.

So, $4 \times \frac{2}{3}$ is the same as $8 \times \frac{1}{3}$...



$$4 \times \frac{2}{3} = \frac{8}{3}$$

Use the models to find the product of each.

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

$$4 \times \frac{2}{5} = \frac{8}{5}$$

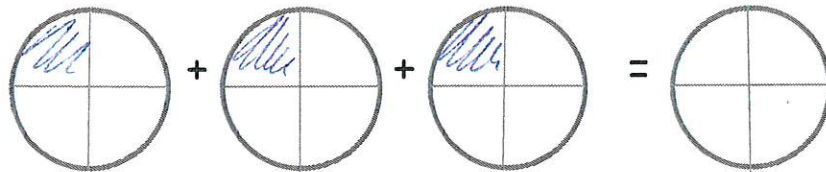
$$3 \times \frac{3}{4} = \frac{9}{4}$$

$$2 \times \frac{3}{5} = \frac{6}{5}$$

Multiplying Fractions & Whole Numbers:

① ONE WAY - Repeated addition:

$$3 \times \frac{1}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \underline{\quad}$$



② ANOTHER (FASTER) WAY:

$$2 \times \frac{1}{6} = \frac{2}{6}$$

$\frac{1}{6} + \frac{1}{6}$

$$4 \times \frac{1}{10} = \frac{4}{10}$$

$\frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10}$

$$5 \times \frac{1}{3} = \frac{5}{3}$$

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

Regular Multiples:

Multiples of 2: 2 4 6 8 10 12 14 16 18

Multiples of 5: 5 10 15 20 25 30 35 40

③ Multiples of a Unit Fraction:

Multiples of 1/8: Repeated Addition:

$$\frac{1}{8} \quad \frac{2}{8} \quad \frac{3}{8} \quad \frac{4}{8} \quad \frac{5}{8}$$

$$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{5}{8}$$

Equation 5 ^{groups of} $\times \frac{1}{8} = \frac{5}{8}$

Multiples of 1/3:

Repeated Addition:

$$\frac{1}{3} \quad \frac{2}{3} \quad \frac{3}{3} \quad \frac{4}{3} \quad \frac{5}{3}$$

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

Equation 5 ^{groups of} $\times \frac{1}{3} = \frac{5}{3}$

Missing Multiples:

1) $\frac{2}{3}$ $\frac{4}{3}$ $\frac{6}{3}$ $\frac{8}{3}$ $\frac{10}{3}$

2) $\frac{3}{8}$ $\frac{6}{8}$ $\frac{9}{8}$ $\frac{12}{8}$ $\frac{15}{8}$

3) $\frac{4}{5}$ $\frac{8}{5}$ $\frac{12}{5}$ $\frac{16}{5}$ $\frac{20}{5}$

4) $\frac{5}{6}$ $\frac{10}{6}$ $\frac{15}{6}$ $\frac{20}{6}$ $\frac{25}{6}$

→ 1 on top

Fraction Multiplication	Equivalent Unit Fraction Multiplication Equation
$\frac{2}{3} + \frac{2}{3}$ $2 \times \frac{2}{3} = \frac{4}{3}$ $\longleftrightarrow$ $4 \times \frac{1}{3} = \frac{4}{3}$ equivalent groups of 1/3	
$3 \times \frac{4}{6} = \frac{12}{6} = 2$	$12 \times \frac{1}{6} = \frac{12}{6} = 2$
$5 \times \frac{3}{8} = \frac{15}{8}$	$15 \times \frac{1}{8} = \frac{15}{8}$
$4 \times \frac{6}{12} = \frac{24}{12} = 2$	$24 \times \frac{1}{12} = \frac{24}{12}$

Answer Key

Name: _____ Date: _____ Score: _____

Adding fractions

{Find the sum of each. Find simplest form if needed.}

$$\frac{1}{3} + \frac{1}{3} = \underline{\frac{2}{3}} \quad \frac{2}{6} + \frac{3}{6} = \underline{\frac{5}{6}} \quad \frac{6}{10} + \frac{1}{10} = \underline{\frac{7}{10}}$$

$$\frac{1}{4} + \frac{2}{4} = \underline{\frac{3}{4}} \quad \frac{2}{5} + \frac{2}{5} = \underline{\frac{4}{5}} \quad \frac{3}{4} + \frac{1}{4} = \underline{\frac{4}{4}}$$

$$\frac{3}{8} + \frac{2}{8} = \underline{\frac{5}{8}} \quad \frac{1}{2} + \frac{1}{2} = \underline{\frac{2}{2}} \quad \frac{5}{8} + \frac{1}{8} = \underline{\frac{6}{8}}$$

$$\frac{2}{6} + \frac{1}{6} = \underline{\frac{3}{6}} \quad \frac{4}{10} + \frac{3}{10} = \underline{\frac{7}{10}} \quad \frac{5}{12} + \frac{2}{12} = \underline{\frac{7}{12}}$$

Answer Key

Name: _____ Date: _____ Score: _____

Subtracting fractions

{Find the difference of each. Find simplest form if needed.}

$$\frac{2}{3} - \frac{1}{3} = \underline{\frac{1}{3}} \quad \frac{5}{6} - \frac{3}{6} = \underline{\frac{2}{6}} \quad \frac{6}{10} - \frac{4}{10} = \underline{\frac{2}{10}}$$

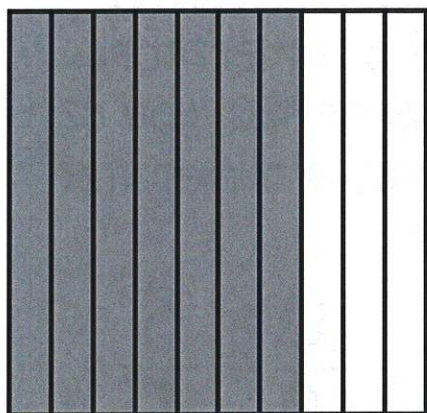
$$\frac{4}{4} - \frac{2}{4} = \underline{\frac{2}{4}} \quad \frac{2}{5} - \frac{2}{5} = \underline{0} \quad \frac{8}{12} - \frac{5}{12} = \underline{\frac{3}{12}}$$

$$\frac{6}{8} - \frac{2}{8} = \underline{\frac{4}{8}} \quad \frac{3}{5} - \frac{1}{5} = \underline{\frac{2}{5}} \quad \frac{5}{8} - \frac{1}{8} = \underline{\frac{4}{8}}$$

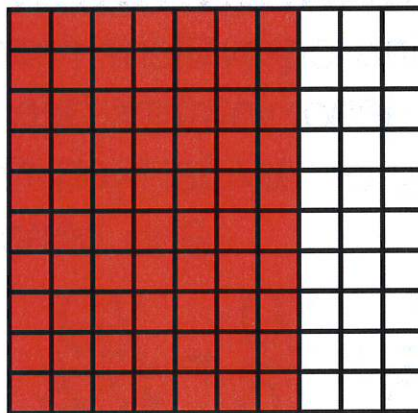
$$\frac{2}{6} - \frac{1}{6} = \underline{\frac{1}{6}} \quad \frac{4}{10} - \frac{3}{10} = \underline{\frac{1}{10}} \quad \frac{5}{12} - \frac{2}{12} = \underline{\frac{3}{12}}$$

Answer Key

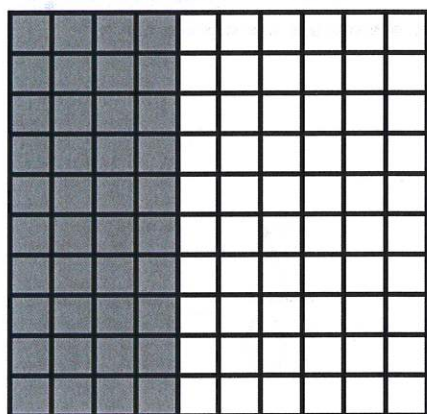
Equivalent fractions: Denominators of 10 & 100



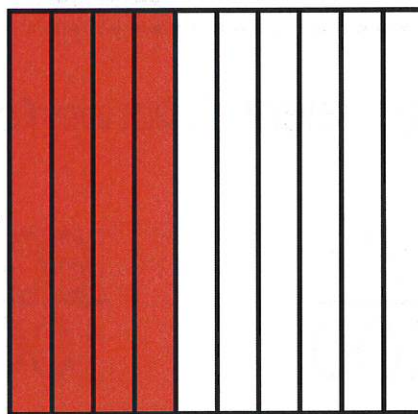
$$\frac{7}{10} =$$



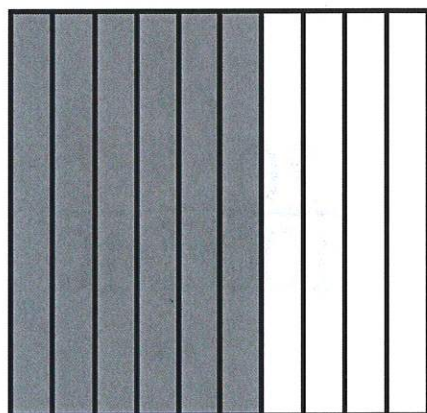
$$\frac{70}{100}$$



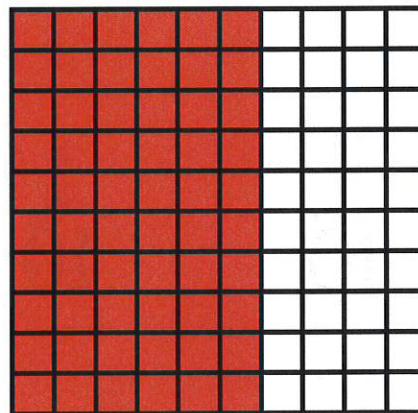
$$\frac{40}{100} =$$



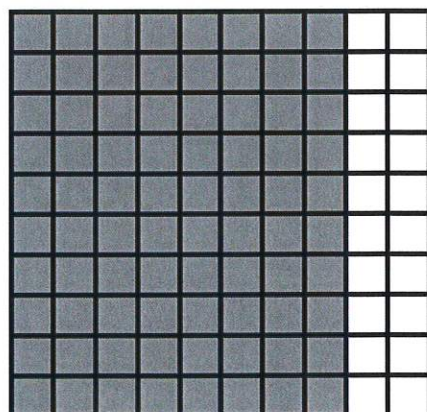
$$\frac{4}{10}$$



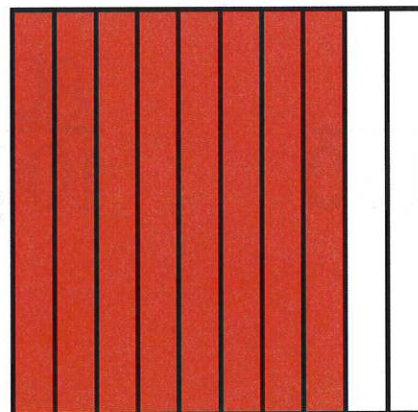
$$\frac{6}{10} =$$



$$\frac{60}{100}$$



$$\frac{80}{100} =$$



$$\frac{8}{10}$$

Answer Key

Equivalent fractions: Denominators of 10 & 100

To find equivalent fractions when the numerators and/or denominators are multiples of 10 or 100, you can multiply or divide by a fraction that has a numerator and denominator of 10.

$$\frac{2}{10} \times \frac{10}{10} = \frac{20}{100}$$

$$\frac{50}{100} \div \frac{10}{10} = \frac{5}{10}$$

{Find an equivalent fraction for each.}

$$\frac{3}{10} = \frac{30}{100}$$

$$\frac{60}{100} = \frac{6}{10}$$

$$\frac{7}{10} = \frac{70}{100}$$

$$\frac{90}{100} = \frac{9}{10}$$

$$\frac{1}{10} = \frac{10}{100}$$

$$\frac{20}{100} = \frac{2}{10}$$

$$\frac{4}{10} = \frac{40}{100}$$

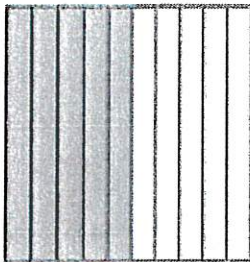
$$\frac{80}{100} = \frac{8}{10}$$

$$\frac{5}{10} = \frac{50}{100}$$

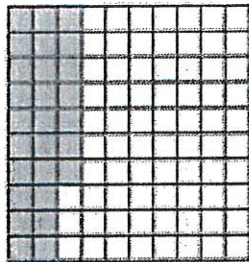
Adding Fractions with mixed 10^{ths} & 100^{ths}

Write the fractions next to each picture and then write the answer out to the side.

$$\frac{50}{100}$$



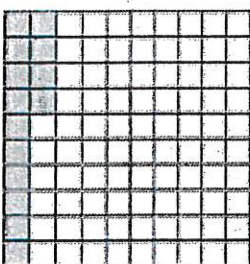
+



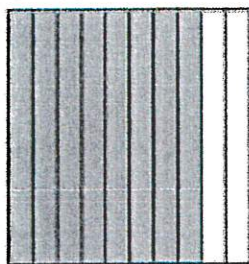
$$\frac{27}{100}$$

$$= \frac{77}{100} \quad \left(\frac{5}{10} = \frac{50}{100} \right)$$

$$\frac{14}{100}$$



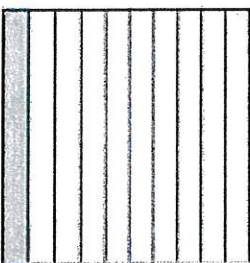
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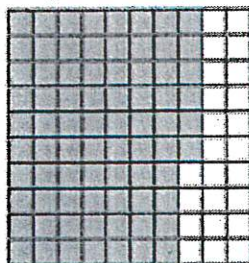
$$\frac{80}{100}$$

$$= \frac{94}{100} \quad \left(\frac{8}{10} = \frac{80}{100} \right)$$

$$\frac{10}{100}$$



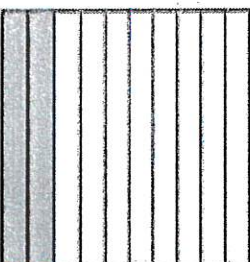
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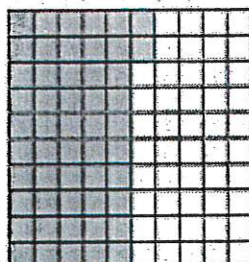
$$\frac{76}{100}$$

$$= \frac{86}{100} \quad \left(\frac{1}{10} = \frac{10}{100} \right)$$

$$\frac{20}{100}$$



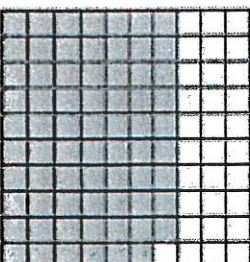
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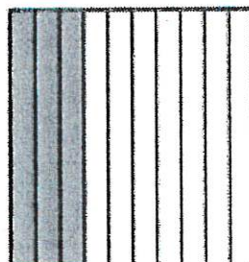
$$\frac{52}{100}$$

$$= \frac{72}{100} \quad \left(\frac{2}{10} = \frac{20}{100} \right)$$

$$\frac{69}{100}$$



+



$$\frac{30}{100}$$

$$= \frac{99}{100} \quad \left(\frac{3}{10} = \frac{30}{100} \right)$$

Answer Key

Name: _____ Date: _____ Score: _____

Adding fractions with Denominators of 10 & 100

{ Find equivalent fractions. Then find the sum. }

$$\frac{3}{10} + \frac{20}{100} = \frac{5}{10}$$

$$\frac{60}{100} + \frac{2}{10} = \frac{8}{10}$$

$$\frac{40}{100} + \frac{5}{10} = \frac{9}{10}$$

$$\frac{7}{10} + \frac{10}{100} = \frac{8}{10}$$

$$\frac{4}{10} + \frac{30}{100} = \frac{7}{10}$$

$$\frac{50}{100} + \frac{4}{10} = \frac{9}{10}$$

$$\frac{60}{100} + \frac{2}{10} = \frac{8}{10}$$

$$\frac{9}{10} + \frac{10}{100} = \frac{10}{10} \text{ or } 1$$

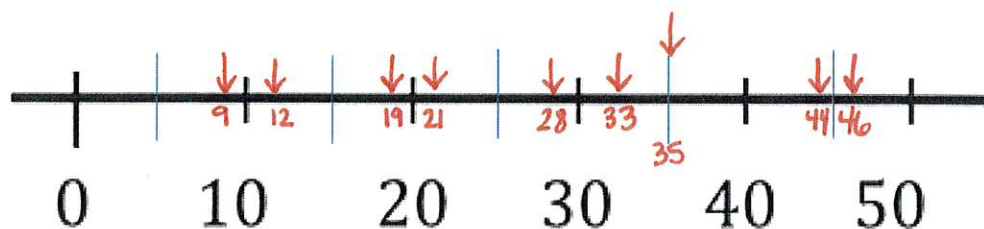
$$\frac{1}{10} + \frac{40}{100} = \frac{5}{10}$$

$$\frac{70}{100} + \frac{2}{10} = \frac{9}{10}$$

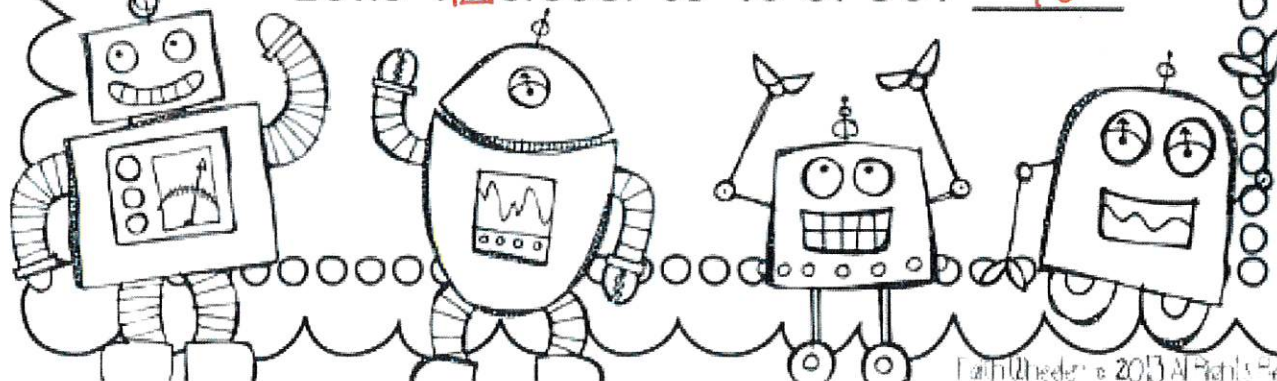
Robot Round Up

Name: _____

KEY

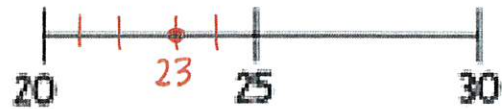


1. Is 12 closer to 10 or 20? 10
2. Is 44 closer to 40 or 50? 40
3. Is 28 closer to 20 or 30? 30
4. Is 35 closer to 30 or 40? 40
5. Is 46 closer to 40 or 50? 50
6. Is 9 closer to 0 or 10? 10
7. Is 19 closer to 10 or 20? 20
8. Is 33 closer to 30 or 40? 30
9. Is 21 closer to 20 or 30? 20
10. Is 44 closer to 40 or 50? 40



Directions: Use each number line to round to the nearest 10.

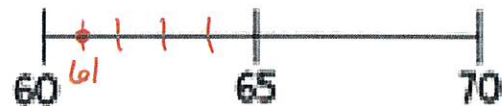
23 is closest to 20



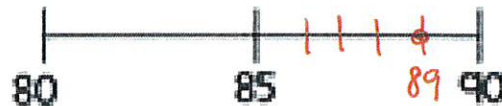
37 is closest to 40



61 is closest to 60



89 is closest to 90



96 is closest to 100

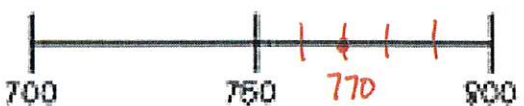


Directions: Use each number line to round to the nearest 100.

268 is closest to 300



779 is closest to 800



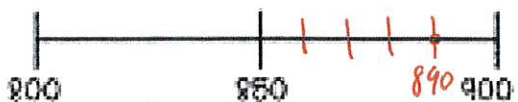
412 is closest to 400



333 is closest to 300



891 is closest to 900



Name: _____ Directions: Create a number line to help you round each one to the nearest 10. (see example)

Number	Number Line	Round to the nearest 10
54 <u>6</u>		550
42 <u>3</u>		420
38 <u>6</u>		390
97 <u>8</u>		980
22 <u>1</u>		220
45 <u>5</u>		460
81 <u>4</u>		810

Directions: Round each number to the nearest 10, then round that same number to the nearest 100.

Nearest 10	Number	Nearest 100
840 OR 850? 850	846	800 OR 900? 800
360 <u>or</u> 370 370	368	300 <u>or</u> 400 400
610 <u>or</u> 620 620	615	600 <u>or</u> 700 600
580 <u>or</u> 590 580	582	500 <u>or</u> 600 600
970 <u>or</u> 980 970	974	900 <u>or</u> 1,000 1,000
450 <u>or</u> 460 450	452	400 <u>or</u> 500 500
790 <u>or</u> 800 800	795	700 <u>or</u> 800 800
70 <u>or</u> 80 80	78	0 <u>or</u> 100 100
700 <u>or</u> 710 710	707	700 <u>or</u> 800 700

Name : _____

Score : _____

Teacher : _____

Date : _____

$$\begin{array}{r} 1) \quad 5756 + 5425 = \\ \quad \quad \textcircled{1} \quad \textcircled{1} \\ \quad \quad 5,756 \\ \quad + 5,425 \\ \hline \quad \quad 11,181 \end{array}$$

$$\begin{array}{r} 2) \quad 5047 + 1000 = \\ \quad \quad 5,047 \\ \quad + 1,000 \\ \hline \quad \quad 6,047 \end{array}$$

$$\begin{array}{r} 3) \quad 5990 + 1530 = \\ \quad \quad \textcircled{1} \quad \textcircled{1} \\ \quad \quad 5,990 \\ \quad + 1,530 \\ \hline \quad \quad 7,520 \end{array}$$

$$\begin{array}{r} 4) \quad 1988 + 2455 = \\ \quad \quad \textcircled{1} \quad \textcircled{1} \quad \textcircled{1} \\ \quad \quad 1,988 \\ \quad + 2,455 \\ \hline \quad \quad 4,443 \end{array}$$

$$\begin{array}{r} 5) \quad 3595 + 3303 = \\ \quad \quad 3,595 \\ \quad + 3,303 \\ \hline \quad \quad 6,898 \end{array}$$

$$\begin{array}{r} 6) \quad 6371 + 9923 = \\ \quad \quad \textcircled{1} \\ \quad \quad 6,371 \\ \quad + 9,923 \\ \hline \quad \quad 16,294 \end{array}$$

$$\begin{array}{r} 7) \quad 2086 + 6606 = \\ \quad \quad \textcircled{1} \\ \quad \quad 2,086 \\ \quad + 6,606 \\ \hline \quad \quad 8,692 \end{array}$$

$$\begin{array}{r} 8) \quad 1462 + 8117 = \\ \quad \quad 1,462 \\ \quad \quad 8,117 \\ \hline \quad \quad 9,579 \end{array}$$

$$\begin{array}{r} 9) \quad 3383 + 6459 = \\ \quad \quad \textcircled{1} \quad \textcircled{1} \\ \quad \quad 3,383 \\ \quad + 6,459 \\ \hline \quad \quad 9,842 \end{array}$$

$$\begin{array}{r} 10) \quad 5482 + 5055 = \\ \quad \quad \textcircled{1} \\ \quad \quad 5,482 \\ \quad + 5,055 \\ \hline \quad \quad 10,537 \end{array}$$

$$\begin{array}{r} 11) \quad 5689 + 3326 = \\ \quad \quad \textcircled{1} \quad \textcircled{1} \quad \textcircled{1} \\ \quad \quad 5,689 \\ \quad + 3,326 \\ \hline \quad \quad 9,015 \end{array}$$

$$\begin{array}{r} 12) \quad 4290 + 3593 = \\ \quad \quad \textcircled{1} \\ \quad \quad 4,290 \\ \quad + 3,593 \\ \hline \quad \quad 7,883 \end{array}$$

Name : _____

Score : _____

Teacher : _____

Date : _____

$$\begin{array}{r} 513,17 \\ 7647 \\ - 4178 \\ \hline 3469 \end{array}$$

$$\begin{array}{r} 611,16 \\ 3726 \\ - 1458 \\ \hline 2,268 \end{array}$$

$$\begin{array}{r} 8775 \\ - 4704 \\ \hline 4,071 \end{array}$$

$$\begin{array}{r} 8328 \\ - 1300 \\ \hline 7,028 \end{array}$$

$$\begin{array}{r} 410,14 \\ 6514 \\ - 5058 \\ \hline 1,456 \end{array}$$

$$\begin{array}{r} 8957 \\ - 4744 \\ \hline 4,213 \end{array}$$

$$\begin{array}{r} 7946 \\ - 5424 \\ \hline 2,522 \end{array}$$

$$\begin{array}{r} 812 \\ 9257 \\ - 1703 \\ \hline 7,554 \end{array}$$

$$\begin{array}{r} 510,216 \\ 6036 \\ - 2129 \\ \hline 3,907 \end{array}$$

$$\begin{array}{r} 510,1110 \\ 6120 \\ - 2963 \\ \hline 3,157 \end{array}$$

$$\begin{array}{r} 511,13 \\ 4623 \\ - 2396 \\ \hline 2,227 \end{array}$$

$$\begin{array}{r} 7377 \\ - 5217 \\ \hline 2,160 \end{array}$$

$$\begin{array}{r} 811,11 \\ 8921 \\ - 5792 \\ \hline 3,129 \end{array}$$

$$\begin{array}{r} 9929 \\ - 7907 \\ \hline 2,022 \end{array}$$

$$\begin{array}{r} 314,16 \\ 8456 \\ - 2279 \\ \hline 6,177 \end{array}$$

