Name _____

• Rounding Decimal Numbers

To round decimal numbers:

- Circle the place value you are rounding to.
- Underline the digit to its right.
- If the underlined number is 5 or more, add 1 to the circled number.
  If the underlined number is 4 or less, the circled number stays the same.
- Drop all digits after the circled digit.

Example: Round to the hundredths' place: 1 . 6 ⑦ 8 5 ⟶ 1 . 6 8

Practice:

1. Round 2.357 to the nearest tenth. _____

2. Round 0.546 to the nearest tenth. _____

3. Round 3.6875 to the nearest hundredth. _____

4. Round 0.942 to the nearest hundredth. _____

5. Divide $8.91 by 6 and round the quotient to the nearest cent. _____

6. Divide $4.70 by 7 and round the quotient to the nearest cent. _____

Name _____

• Mentally Dividing Decimal Numbers by 10 and by 100

Since we are dividing, the answer will be less than the starting number.

- Shift the decimal **left** for division—one place for each **zero** in the divisor. Fill empty places with zeros.

Example: ← Shift left

$3.4 \div 10 = 0.34$

$3.4 \div 100 = 0.034$

Practice:

Simplify 1–6.

1. $95.4 \div 10 =$ _____

2. $3.8 \div 10 =$ _____

3. $71.5 \div 100 =$ _____

4. $3.6 \div 100 =$ _____

5. $2.25 \div 100 =$ _____

6. $87.9 \div 100 =$ _____

Name _____

- **Decimals Chart**
- **Simplifying Fractions**

Decimal Reminders

Operation	+ or −	×	÷ by whole (W)	÷ by decimal (D)
Memory cue	line up . . + . . .	×; then count .– – × .– .– – –	up . W) .	over, over, up . . D) . .
You may need to: • Place a decimal point to the right of a whole number. • Fill empty places with zeros.				

To reduce fractions to lowest terms:

- Divide both numbers by the largest number that will go into both evenly. (This is the GCF.)

Example: $\frac{4}{8}$ Divide the numerator and denominator by 4 (not 2).

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

To convert and reduce improper fractions to mixed numbers:

- Fix the "top heavy" number.
- Add it to the whole number.

Example: $2\frac{10}{8}$ Fix the "top heavy" number.

$$\frac{10}{8} = 1\frac{2}{8} = 1\frac{1}{4}$$

Add to the whole number.

$$2 + 1\frac{1}{4} = 3\frac{1}{4}$$

If you need to reduce **and** convert you may do so in either order:

Practice:

1. What do you do with empty places when dividing with decimals?

_____

Simplify 2–5.

2. $\frac{3}{8} + \frac{7}{8} =$ _____

3. $\frac{5}{12} + \frac{11}{12} =$ _____

4. $\frac{3}{10} + \frac{9}{10} =$ _____

5. $\frac{7}{9} + \frac{5}{9} =$ _____

Name _____

• Reducing by Grouping Factors Equal to 1

Notice that some factors appear in both the dividend and the divisor. Since $2 \div 2 = 1$, we can mark combinations of factors equal to 1. Then solve the simplified problem.

Example: $\dfrac{\cancel{2} \cdot \cancel{2} \cdot \cancel{3} \cdot 5}{\cancel{2} \cdot \cancel{2} \cdot \cancel{3}} = 1 \cdot 1 \cdot 1 \cdot 5 = 5$

Practice:

Reduce 1–4.

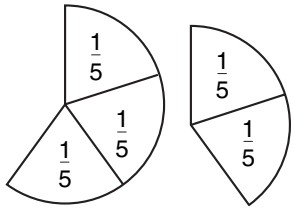
1. $\dfrac{2 \cdot 2 \cdot 3 \cdot 4 \cdot 5}{2 \cdot 2 \cdot 4 \cdot 5} =$ _____

2. $\dfrac{2 \cdot 2 \cdot 3}{2 \cdot 3 \cdot 4 \cdot 4} =$ _____

3. $\dfrac{2 \cdot 3 \cdot 3 \cdot 5}{2 \cdot 2 \cdot 3 \cdot 3 \cdot 4} =$ _____

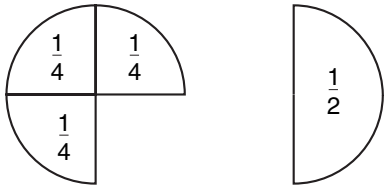
4. $\dfrac{2 \cdot 3 \cdot 4 \cdot 4}{2 \cdot 2 \cdot 2 \cdot 3 \cdot 3 \cdot 4} =$ _____

• Common Denominators, Part 1



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

The *common denominator* is 5.



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

These fractions *do not* have common denominators.

To add or subtract fractions that do not have common denominators:

- Find the fraction with the largest denominator.
- Decide if that denominator can be the common denominator.
- Rename the fractions.
- Add or subtract.
- Simplify your answer.

Example:

$$\begin{array}{rl} \frac{3}{4} & = \frac{3}{4} \\ +\ \frac{1}{2} \times \frac{2}{2} & = \frac{2}{4} = 1\frac{1}{4} \\ \hline & \frac{5}{4} \end{array}$$

Practice:

Simplify 1–5.

1. $\begin{array}{r} \frac{2}{3} \\ +\ \frac{1}{6} \\ \hline \end{array}$

2. $\begin{array}{r} \frac{1}{2} \\ +\ \frac{1}{4} \\ \hline \end{array}$

3. $\begin{array}{r} \frac{1}{2} \\ -\ \frac{3}{8} \\ \hline \end{array}$

4. $\frac{3}{4} + \frac{3}{8} =$ _____

5. $\frac{7}{12} - \frac{1}{3} =$ _____

Name _____

• Common Denominators, Part 2

If **both** fractions must be renamed:

- Find a common denominator by multiplying the denominators.
- Rename fractions using the common denominator.
- Add or subtract. Simplify as necessary.
- Short cut: Using the LCM of the denominator for the common denominator often saves time.

Example:

$$\begin{array}{r} \frac{2}{3} \times \frac{4}{4} = \frac{8}{12} \\ +\ \frac{2}{4} \times \frac{3}{3} = \frac{6}{12} \\ \hline \frac{14}{12} \end{array} = 1\frac{2}{12} = 1\frac{1}{6}$$

Renaming fractions can also help us compare fractions.

Example: $\frac{2}{3} \bigcirc \frac{3}{4} \longrightarrow \frac{2}{3} \times \frac{4}{4} = \mathbf{\frac{8}{12}} \bigcirc \frac{3}{4} \times \frac{3}{3} = \mathbf{\frac{9}{12}}$

$\frac{8}{12} < \frac{9}{12}$ so $\frac{2}{3} < \frac{3}{4}$

Practice:

Simplify 1–4.

1. $\frac{1}{4} + \frac{1}{5} =$ _____

2. $\frac{1}{2} + \frac{4}{5} =$ _____

3. $\frac{2}{3} - \frac{1}{2} =$ _____

4. $\frac{2}{3} - \frac{1}{4} =$ _____

Compare 5–6.

5. $\frac{1}{2} \bigcirc \frac{2}{3}$

6. $\frac{2}{3} \bigcirc \frac{6}{9}$

• Adding and Subtracting Fractions: Three Steps

When adding and subtracting fractions, remember the S. O. S. method.

- **S**hape—Write the problem in the correct shape. Rename fractions to have common denominators. (Find the LCM. Use the times table for help.)
- **O**perate—Add or subtract.
- **S**implify—Reduce or convert.

Practice:

Simplify 1–6.

1. $\frac{1}{3} + \frac{5}{9} =$ _____

2. $\frac{1}{4} + \frac{5}{6} =$ _____

3. $\frac{4}{5} + \frac{1}{2} =$ _____

4. $\frac{1}{2} - \frac{1}{3} =$ _____

5. $\frac{1}{2} - \frac{1}{8} =$ _____

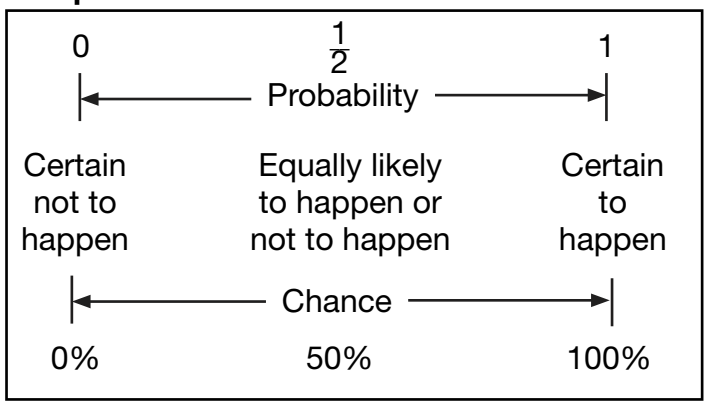
6. $\frac{3}{4} - \frac{1}{3} =$ _____

Name _____

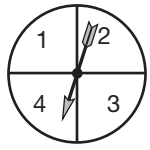
• Probability and Chance

Probability and chance **both tell** how likely an event is to happen.

- **Probability** tells it with a (reduced) **fraction.**
- **Chance** tells it with a **percent.**

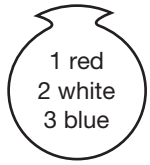


Example: **a.** What is the **probability** that the spinner will stop on a number greater than 1? $\frac{3}{4}$



b. What is the **chance** of spinning a number greater than 1? 75%

Example: What is the **probability** of pulling a blue marble out of the bag?



$$\frac{\text{Number of favorable outcomes}}{\text{Number of possible outcomes}} = \frac{\text{Number of blue marbles}}{\text{Total marbles}} = \frac{3}{6}$$

Then reduce. $\frac{3}{6} = \frac{1}{2}$

Practice:

1. If a number cube is rolled, what is the probability that the number rolled will be greater than 3? _____

2. What is the probability of rolling a 1 with one roll of a number cube? _____

3. A bag contains 2 red marbles, 3 blue marbles, and 5 green marbles. If one marble is drawn from the bag, what is the chance that the marble will be red? _____

4. The face of this spinner is divided into six congruent sectors. If the spinner is spun once, what is the chance that it will stop on a 2? _____

• Adding Mixed Numbers

To add mixed numbers with *unlike* denominators, remember the S. O. S. method.

- **S**hape—Write the problem in the correct shape. Rename fractions to have common denominators. (Find the LCM. Use the times table for help.)
- **O**perate—Add the renamed fractions and the whole numbers.
- **S**implify—Reduce or convert.

Example:

$$\begin{array}{r} 3\frac{1}{2} \times \frac{3}{3} = 3\frac{3}{6} \\ +\ 1\frac{1}{3} \times \frac{2}{2} = 1\frac{2}{6} \\ \hline 4\frac{5}{6} \end{array}$$

Practice:

Simplify 1–6.

1. $1\frac{1}{2} + 3\frac{1}{3} =$ _____

2. $6\frac{3}{4} + 4\frac{3}{8} =$ _____

3. $5\frac{7}{9} + 1\frac{1}{3} =$ _____

4. $2\frac{1}{3} + 1\frac{3}{4} =$ _____

5. $2\frac{3}{8} + 3\frac{1}{2} =$ _____

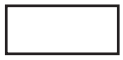
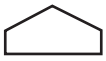
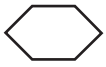
6. $3\frac{1}{3} + 2\frac{1}{6} =$ _____

Name _____

• Polygons

- **Polygons** are closed, flat shapes made from straight lines.
- Two sides of a polygon meet at a **vertex.**
- A **quadrilateral** is a polygon with four sides.
- The sides of a **regular** polygon are the same length.
- The angles of a **regular** polygon are equal.
- A **square** is a regular quadrilateral.

Polygons

Shape	Number of Sides	Name of Polygon
	3	triangle
	4	quadrilateral
	5	pentagon
	6	hexagon
	8	octagon

Practice:

1. A pentagon is a polygon with how many sides? _____

2. What is a regular quadrilateral? _____

3. What is the perimeter of a regular hexagon if each side is 6 inches long?

_____

4. The perimeter of a regular octagon is 96 mm. How long is each side?

_____

5. Each side of a regular hexagon is 16 cm. What is the perimeter?

_____