

**Incoming 6th Grade
Summer Math 2020
Due on the first day of
school**

Lesson 5 Subtraction

$$\begin{array}{r} 3\frac{2}{3} \longrightarrow 3\frac{4}{6} \\ -1\frac{1}{6} \longrightarrow -1\frac{1}{6} \\ \hline \end{array}$$

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

Rename the numbers so the fractions have the same denominator.

Subtract the fractions.

Subtract the whole numbers.

Change to simplest form.

$$\begin{array}{r} 3 \longrightarrow 2\frac{4}{4} \\ -\frac{1}{4} \longrightarrow -\frac{1}{4} \\ \hline 2\frac{3}{4} \end{array} \quad \begin{array}{l} 3 = 2 + 1 \\ = 2 + \frac{4}{4} \\ = 2\frac{4}{4} \end{array}$$

Write each answer in simplest form.

	a	b	c	d
1.	7	4	5	8
	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{2}{3}$	$\frac{1}{8}$
2.	$3\frac{4}{5}$	$5\frac{2}{3}$	$4\frac{5}{6}$	$5\frac{9}{10}$
	$1\frac{1}{2}$	$3\frac{4}{9}$	$1\frac{1}{2}$	$3\frac{2}{5}$
3.	5	$6\frac{3}{4}$	$2\frac{2}{3}$	10
	$\frac{3}{5}$	$5\frac{1}{8}$	$1\frac{1}{2}$	$2\frac{3}{10}$
4.	$10\frac{5}{6}$	8	$9\frac{5}{6}$	6
	$7\frac{5}{12}$	$\frac{5}{8}$	$2\frac{1}{3}$	$\frac{9}{10}$

Lesson 4 Addition

$$\begin{array}{r}
 3\frac{1}{2} \longrightarrow 3\frac{4}{8} \\
 +1\frac{1}{8} \longrightarrow +1\frac{1}{8} \\
 \hline
 4\frac{5}{8}
 \end{array}$$

Rename the numbers so
the fractions have the
same denominator.
Add the fractions.
Add the whole numbers.

$$\begin{array}{r}
 1\frac{1}{2} \longrightarrow 1\frac{6}{12} \\
 3\frac{3}{4} \longrightarrow 3\frac{9}{12} \\
 +\frac{2}{3} \longrightarrow +\frac{8}{12} \\
 \hline
 4\frac{23}{12} = 5\frac{11}{12}
 \end{array}$$

Change to simplest form.

Write each answer in simplest form.

a

$$\begin{array}{r}
 1. \quad 3\frac{1}{4} \\
 +2\frac{4}{5} \\
 \hline
 \end{array}$$

b

$$\begin{array}{r}
 3\frac{1}{6} \\
 +\frac{3}{4} \\
 \hline
 \end{array}$$

c

$$\begin{array}{r}
 5\frac{1}{2} \\
 +1\frac{5}{8} \\
 \hline
 \end{array}$$

d

$$\begin{array}{r}
 3\frac{11}{12} \\
 +\frac{5}{6} \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 2. \quad 9\frac{7}{8} \\
 +\frac{3}{4} \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 7\frac{2}{5} \\
 +4\frac{3}{10} \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 \frac{3}{5} \\
 +2\frac{5}{6} \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 \frac{9}{10} \\
 +3\frac{5}{6} \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 3. \quad 6\frac{2}{3} \\
 1\frac{3}{4} \\
 +\frac{1}{6} \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 2\frac{1}{5} \\
 2\frac{1}{4} \\
 +1\frac{1}{2} \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 3\frac{1}{3} \\
 \frac{5}{6} \\
 +3\frac{7}{12} \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 \frac{1}{2} \\
 5\frac{1}{5} \\
 +1\frac{3}{10} \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 4. \quad \frac{3}{5} \\
 1\frac{2}{3} \\
 +2\frac{1}{2} \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 3\frac{5}{8} \\
 2\frac{1}{6} \\
 +\frac{5}{12} \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 \frac{1}{4} \\
 1\frac{1}{2} \\
 +4\frac{7}{8} \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 2\frac{2}{3} \\
 2\frac{1}{2} \\
 +3\frac{2}{5} \\
 \hline
 \end{array}$$

Lesson 3 Addition and Subtraction

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

The denominators are 4 and 6. Since $3 \times 4 = 12$ and $2 \times 6 = 12$, rename each fraction with a denominator of 12.

$$\begin{array}{r} \frac{9}{12} \\ + \frac{2}{12} \\ \hline \frac{11}{12} \end{array}$$

Add the fractions.

$$\begin{array}{r} \frac{9}{10} \longrightarrow \frac{9}{10} \\ - \frac{2}{5} \times \frac{2}{2} \\ \hline - \frac{4}{10} \\ \hline \frac{5}{10} = \frac{1}{2} \end{array}$$

The denominators are 5 and 10. Since $2 \times 5 = 10$, rename only $\frac{2}{5}$ with a denominator of 10. Subtract the fractions. Change to simplest form.

Write each answer in simplest form.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
1.	$\frac{2}{5}$	$\frac{2}{5}$	$\frac{3}{4}$	$\frac{7}{8}$
	$+\frac{1}{2}$	$+\frac{1}{3}$	$+\frac{1}{2}$	$+\frac{1}{4}$
	<hr/>	<hr/>	<hr/>	<hr/>

2.	$\frac{2}{3}$	$\frac{3}{5}$	$\frac{2}{3}$	$\frac{1}{2}$
	$-\frac{1}{4}$	$-\frac{1}{2}$	$-\frac{1}{6}$	$-\frac{3}{10}$
	<hr/>	<hr/>	<hr/>	<hr/>

3.	$\frac{9}{10}$	$\frac{5}{6}$	$\frac{5}{6}$	$\frac{7}{10}$
	$+\frac{1}{2}$	$-\frac{3}{4}$	$+\frac{1}{2}$	$-\frac{1}{5}$
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4.	$\frac{2}{3}$	$\frac{11}{12}$	$\frac{5}{6}$	$\frac{9}{10}$
	$+\frac{5}{6}$	$-\frac{1}{4}$	$+\frac{3}{10}$	$-\frac{1}{2}$
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Lesson 8 Simplest Form

A fraction is in simplest form when its numerator and denominator have no common factors, except 1.

Divide 12 and 15 by their greatest common factor.

$$\frac{12}{15} = \frac{12 \div 3}{15 \div 3} = \frac{4}{5}$$

The simplest form for $\frac{12}{15}$ is $\frac{4}{5}$.

A mixed numeral is in simplest form when its fraction is in simplest form and names a number less than 1.

Divide 4 and 6 by their greatest common factor.

$$\begin{aligned} 3\frac{4}{6} &= 3 + \frac{4 \div 2}{6 \div 2} \\ &= 3 + \frac{2}{3} \\ &= 3\frac{2}{3} \end{aligned}$$

The simplest form for $3\frac{4}{6}$ is _____.

Change each of the following to simplest form.

1. $\frac{a}{\frac{8}{10}}$

$\frac{b}{\frac{10}{20}}$

$\frac{c}{\frac{14}{21}}$

2. $2\frac{4}{8}$

$3\frac{6}{9}$

$5\frac{8}{10}$

3. $\frac{12}{18}$

$5\frac{9}{12}$

$\frac{15}{18}$

4. $6\frac{8}{12}$

$\frac{25}{30}$

$3\frac{12}{16}$

5. $\frac{24}{30}$

$3\frac{14}{18}$

$\frac{16}{32}$

Lesson 4 Mixed Numerals to Fractions

$$4\frac{2}{3} = \frac{(3 \times 4) + 2}{3}$$

$$= \frac{12 + 2}{3}$$

$$= \frac{14}{3}$$

Multiply the denominator by the whole number and add the numerator.

Use the same denominator.

$$3\frac{1}{6} = \frac{(\quad \times \quad) + \quad}{6}$$

$$= \frac{\quad + \quad}{6}$$

$$= \frac{\quad}{6}$$

Change each mixed numeral to a fraction.

a

1. $2\frac{5}{8}$

b

$2\frac{3}{5}$

c

$3\frac{2}{3}$

2. $3\frac{7}{10}$

$10\frac{2}{3}$

$14\frac{1}{2}$

3. $6\frac{7}{8}$

$5\frac{9}{10}$

$13\frac{5}{12}$

4. $4\frac{5}{6}$

$7\frac{3}{4}$

$8\frac{11}{12}$

Lesson 3 Addition

$$\frac{2}{5} + \frac{1}{5} = \frac{2+1}{5} \quad \text{Add the numerators.}$$

$$= \frac{3}{5} \quad \text{Use the same denominator.}$$

$$\begin{array}{r} \frac{2}{5} \\ + \frac{1}{5} \\ \hline \frac{3}{5} \end{array}$$

$$\frac{3}{10} + \frac{4}{10} + \frac{2}{10} = \frac{\quad}{10} + \frac{\quad}{10}$$

$$= \frac{\quad}{10}$$

$$\begin{array}{r} \frac{3}{10} \\ + \frac{4}{10} \\ + \frac{2}{10} \\ \hline \end{array}$$

Add.

- | | | | | |
|----|---------------------------------|---------------------------------|---------------------------------|--|
| | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> |
| 1. | $\frac{3}{5} + \frac{1}{5} =$ | $\frac{4}{8} + \frac{3}{8} =$ | $\frac{2}{7} + \frac{2}{7} =$ | $\frac{1}{5} + \frac{2}{5} + \frac{1}{5} =$ |
| 2. | $\frac{3}{6} + \frac{2}{6} =$ | $\frac{1}{7} + \frac{3}{7} =$ | $\frac{2}{8} + \frac{1}{8} =$ | $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} =$ |
| 3. | $\frac{3}{10} + \frac{4}{10} =$ | $\frac{4}{12} + \frac{1}{12} =$ | $\frac{5}{11} + \frac{4}{11} =$ | $\frac{2}{15} + \frac{2}{15} + \frac{7}{15} =$ |

- | | | | | | | |
|----|----------------|----------------|----------------|-----------------|-----------------|-----------------|
| | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> | <i>e</i> | <i>f</i> |
| 4. | $\frac{4}{6}$ | $\frac{3}{8}$ | $\frac{1}{7}$ | $\frac{3}{10}$ | $\frac{7}{12}$ | $\frac{3}{11}$ |
| | $+\frac{1}{6}$ | $+\frac{4}{8}$ | $+\frac{2}{7}$ | $+\frac{6}{10}$ | $+\frac{4}{12}$ | $+\frac{1}{11}$ |
| | <hr/> | <hr/> | <hr/> | <hr/> | <hr/> | <hr/> |
| 5. | $\frac{1}{5}$ | $\frac{2}{7}$ | $\frac{2}{8}$ | $\frac{4}{10}$ | $\frac{3}{15}$ | $\frac{1}{12}$ |
| | $\frac{1}{5}$ | $\frac{3}{7}$ | $\frac{1}{8}$ | $\frac{1}{10}$ | $\frac{4}{15}$ | $\frac{4}{12}$ |
| | $+\frac{1}{5}$ | $+\frac{1}{7}$ | $+\frac{2}{8}$ | $+\frac{2}{10}$ | $+\frac{4}{15}$ | $+\frac{2}{12}$ |
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Lesson 1 Division

Place a decimal point in the quotient directly above the decimal point in the dividend. Then divide as if both numbers were whole numbers.

$$\begin{array}{r} 17 \\ 6 \overline{) 102} \\ \underline{60} \\ 42 \\ \underline{42} \\ 0 \end{array}$$

$$\begin{array}{r} 17 \\ 6 \overline{) 102} \\ \underline{60} \\ 42 \\ \underline{42} \\ 0 \end{array}$$

$$\begin{array}{r} 0.17 \\ 6 \overline{) 1.02} \\ \underline{60} \\ 42 \\ \underline{42} \\ 0 \end{array}$$

$$\begin{array}{r} 0.017 \\ 6 \overline{) 0.102} \\ \underline{60} \\ 42 \\ \underline{42} \\ 0 \end{array}$$

Divide.

*a**b**c**d**e*

1. $4 \overline{) 292}$

$4 \overline{) 292}$

$4 \overline{) 2.92}$

$4 \overline{) 0.292}$

$4 \overline{) 0.0292}$

2. $3 \overline{) 5.61}$

$8 \overline{) 0.0216}$

$7 \overline{) 0.231}$

$4 \overline{) 4.64}$

$6 \overline{) 25.2}$

3. $7 \overline{) 24.5}$

$8 \overline{) 0.336}$

$6 \overline{) 0.0162}$

$4 \overline{) 24.4}$

$3 \overline{) 1.68}$

Lesson 1 Multiplication

number of digits to the right of the decimal point

4	0	0.4	1	0.04	2	0.04	2	0.04	2
×3	+0	×3	+0	×3	+0	×.3	+1	×.03	+2
12	0	1.2	1	0.12	2	0.012	3	0.0012	4

Write in as many 0's as needed to place the decimal point correctly.

Multiply.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
1.	$\begin{array}{r} 2 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 0.2 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 0.02 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 0.002 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times 0.3 \\ \hline \end{array}$
2.	$\begin{array}{r} 8 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 0.8 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 0.08 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 0.008 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 0.06 \\ \times 8 \\ \hline \end{array}$
3.	$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 0.5 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 0.05 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 0.005 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 0.003 \\ \times 5 \\ \hline \end{array}$
4.	$\begin{array}{r} 3 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 0.3 \\ \times 0.4 \\ \hline \end{array}$	$\begin{array}{r} 0.03 \\ \times 0.4 \\ \hline \end{array}$	$\begin{array}{r} 0.04 \\ \times 0.3 \\ \hline \end{array}$	$\begin{array}{r} 0.03 \\ \times 0.04 \\ \hline \end{array}$
5.	$\begin{array}{r} 6 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 0.6 \\ \times 0.7 \\ \hline \end{array}$	$\begin{array}{r} 0.06 \\ \times 0.7 \\ \hline \end{array}$	$\begin{array}{r} 0.07 \\ \times 0.6 \\ \hline \end{array}$	$\begin{array}{r} 0.06 \\ \times 0.07 \\ \hline \end{array}$
6.	$\begin{array}{r} 9 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 0.9 \\ \times 0.8 \\ \hline \end{array}$	$\begin{array}{r} 0.09 \\ \times 0.8 \\ \hline \end{array}$	$\begin{array}{r} 0.08 \\ \times 0.9 \\ \hline \end{array}$	$\begin{array}{r} 0.09 \\ \times 0.08 \\ \hline \end{array}$

Lesson 9 Subtraction

When subtracting decimals, line up the decimal points. Subtract decimals like you subtract whole numbers.

$\begin{array}{r} 9.5 \\ -2.3 \\ \hline 7.2 \end{array}$	$\begin{array}{r} \overset{3}{\cancel{4}} \overset{13}{\cancel{3}} \\ -1.6 \\ \hline 2.7 \end{array}$	$\begin{array}{r} \overset{0}{\cancel{0}} \overset{14}{\cancel{1}} \\ -0.08 \\ \hline 0.06 \end{array}$	$\begin{array}{r} \overset{3}{\cancel{4}} \overset{12}{\cancel{2}} \overset{4}{\cancel{5}} \overset{13}{\cancel{3}} \\ -5.327 \\ \hline 37.426 \end{array}$
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Place the decimal point in the answer.

Subtract.

	a	b	c	d	e
1.	$\begin{array}{r} 0.7 \\ -0.3 \\ \hline \end{array}$	$\begin{array}{r} 0.9 \\ -0.2 \\ \hline \end{array}$	$\begin{array}{r} 0.6 \\ -0.2 \\ \hline \end{array}$	$\begin{array}{r} 0.9 \\ -0.1 \\ \hline \end{array}$	$\begin{array}{r} 0.8 \\ -0.5 \\ \hline \end{array}$
2.	$\begin{array}{r} 0.42 \\ -0.31 \\ \hline \end{array}$	$\begin{array}{r} 0.56 \\ -0.23 \\ \hline \end{array}$	$\begin{array}{r} 0.07 \\ -0.02 \\ \hline \end{array}$	$\begin{array}{r} 0.85 \\ -0.37 \\ \hline \end{array}$	$\begin{array}{r} \$0.52 \\ -0.37 \\ \hline \end{array}$
3.	$\begin{array}{r} 0.345 \\ -0.234 \\ \hline \end{array}$	$\begin{array}{r} 0.548 \\ -0.259 \\ \hline \end{array}$	$\begin{array}{r} 0.815 \\ -0.607 \\ \hline \end{array}$	$\begin{array}{r} 0.828 \\ -0.389 \\ \hline \end{array}$	$\begin{array}{r} 0.754 \\ -0.375 \\ \hline \end{array}$
4.	$\begin{array}{r} 4.6 \\ -3.2 \\ \hline \end{array}$	$\begin{array}{r} 7.4 \\ -2.8 \\ \hline \end{array}$	$\begin{array}{r} 8.6 \\ -3.7 \\ \hline \end{array}$	$\begin{array}{r} 5.6 \\ -0.7 \\ \hline \end{array}$	$\begin{array}{r} 19.2 \\ -0.9 \\ \hline \end{array}$
5.	$\begin{array}{r} 4.36 \\ -1.23 \\ \hline \end{array}$	$\begin{array}{r} \$6.55 \\ -2.73 \\ \hline \end{array}$	$\begin{array}{r} 4.08 \\ -0.39 \\ \hline \end{array}$	$\begin{array}{r} \$15.32 \\ -2.67 \\ \hline \end{array}$	$\begin{array}{r} \$4.09 \\ -0.32 \\ \hline \end{array}$
6.	$\begin{array}{r} 4.213 \\ -2.001 \\ \hline \end{array}$	$\begin{array}{r} 3.624 \\ -1.415 \\ \hline \end{array}$	$\begin{array}{r} 4.307 \\ -1.495 \\ \hline \end{array}$	$\begin{array}{r} 26.345 \\ -2.543 \\ \hline \end{array}$	$\begin{array}{r} 15.108 \\ -3.912 \\ \hline \end{array}$
7.	$\begin{array}{r} 15.3 \\ -4.9 \\ \hline \end{array}$	$\begin{array}{r} 6.23 \\ -3.75 \\ \hline \end{array}$	$\begin{array}{r} 14.21 \\ -7.08 \\ \hline \end{array}$	$\begin{array}{r} 3.002 \\ -1.047 \\ \hline \end{array}$	$\begin{array}{r} 19.801 \\ -7.413 \\ \hline \end{array}$

Lesson 8 Addition

You may write these 0's
if they help you add.

$$\begin{array}{r} 0.8 \\ +0.39 \\ \hline 1.19 \end{array} \quad \text{or} \quad \begin{array}{r} 0.80 \\ +0.39 \\ \hline 1.19 \end{array}$$

$$\begin{array}{r} 4.2 \\ 3.018 \\ +0.82 \\ \hline 8.038 \end{array} \quad \text{or} \quad \begin{array}{r} 4.200 \\ 3.018 \\ +0.820 \\ \hline 8.038 \end{array}$$

Add. If necessary, use 0's as shown in the examples.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
1.	$\begin{array}{r} 0.9 \\ +0.42 \\ \hline \end{array}$	$\begin{array}{r} 0.83 \\ +0.4 \\ \hline \end{array}$	$\begin{array}{r} 0.6 \\ +0.401 \\ \hline \end{array}$	$\begin{array}{r} 0.72 \\ +0.423 \\ \hline \end{array}$	$\begin{array}{r} 0.645 \\ +0.2 \\ \hline \end{array}$
2.	$\begin{array}{r} 2.75 \\ +3.308 \\ \hline \end{array}$	$\begin{array}{r} 5.54 \\ +7.6 \\ \hline \end{array}$	$\begin{array}{r} 3.8 \\ +0.316 \\ \hline \end{array}$	$\begin{array}{r} 0.29 \\ +8.043 \\ \hline \end{array}$	$\begin{array}{r} 29.5 \\ +4.93 \\ \hline \end{array}$
3.	$\begin{array}{r} 0.42 \\ 0.8 \\ +0.018 \\ \hline \end{array}$	$\begin{array}{r} 0.31 \\ 0.2 \\ +0.45 \\ \hline \end{array}$	$\begin{array}{r} 0.76 \\ 0.82 \\ +0.9 \\ \hline \end{array}$	$\begin{array}{r} 0.431 \\ 0.2 \\ +0.45 \\ \hline \end{array}$	$\begin{array}{r} 0.5 \\ 0.316 \\ +0.099 \\ \hline \end{array}$
4.	$\begin{array}{r} 3.182 \\ 1.34 \\ +2.6 \\ \hline \end{array}$	$\begin{array}{r} 4.72 \\ 5.8 \\ +6.317 \\ \hline \end{array}$	$\begin{array}{r} 7.426 \\ 3.318 \\ +0.2 \\ \hline \end{array}$	$\begin{array}{r} 0.731 \\ 8.45 \\ +2.28 \\ \hline \end{array}$	$\begin{array}{r} 0.3 \\ 0.384 \\ +9.42 \\ \hline \end{array}$

Complete the following.

- | <i>a</i> | <i>b</i> |
|---------------------------|-------------------------------|
| 5. $0.8 + 0.91 =$ _____ | $0.4 + 0.016 + 0.75 =$ _____ |
| 6. $0.58 + 0.114 =$ _____ | $0.32 + 0.42 + 0.113 =$ _____ |
| 7. $0.9 + 0.301 =$ _____ | $4.8 + 3.21 + 0.014 =$ _____ |
| 8. $2.4 + 0.31 =$ _____ | $5.24 + 0.016 + 21.3 =$ _____ |