Summer Math 2019

Students Entering 6th Grade

Dear Rising 6th Grade Students and Families,

Congratulations on a phenomenal year in 5th grade mathematics!!! We are proud of each student and celebrate the great math thinking and growth we experienced this year.

The following skills has been identified as the most critical for students as they start 6th grade. Students should work through this packet with the goal that they are proficient in these skills in September. I would also recommend using Khan Academy and IXL.com as a resource for clearing up misconceptions or additional practice.

This assignment will be your first graded Math assignment!!!! Please, try to spread the work out on separate days—each page should take no more than 20 minutes, and some should take a lot less time. Clearly, your work on this packet should not just be a list of answers, but should show your work so we can see how you are thinking.

This packet is due on the Friday, September 13, 2019

Next year, we will do a lot of work with fractions, decimals, and percentages. Be on the look-out this summer for ways in which you use them in real life. Here are some ways that you might practice this summer:

- Cook with your family - recipes often use fractional measurements. How would you double or "half" the recipe? L SEP
- Shop for bargains. Notice the "sale" signs, and what they mean. If I have a "20% off" coupon, what will be the sale price? L SEP
- Work with money - estimate the price of your groceries, make change, figure out the best deal by using unit price. L SEP
- Figure out the tip —if your family is at a restaurant, figure out how to determine the amount to leave for a tip. L SEP

Thank you for your partnership around math education at Pierce! Have a great summer! L SEP

All the best,

Mrs. McPherson

Refresher Worksheet 1

Multiplication of Whole Numbers

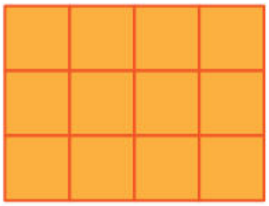
Key Concept and Vocabulary

factors product

$3 \cdot 4 = 12$

Visual Model

A rectangle that is 3 units by 4 units has an area of 12 square units.



Area $= 3 \times 4$

$= 12$ square units

Skill Examples

1. $6 \cdot 7 = 42$
2. $0 \times 5 = 0$
3. $8 \cdot 1 = 8$
4. $(9)(12) = 108$
5. $15 \times 20 = 300$

Application Example

6. Find the area of a rectangular lot that is 20 yards wide and 35 yards long.

Area = (length)(width)

$= 35 \cdot 20$

$= 700 \text{ yd}^2$

∴ The area is 700 square yards.

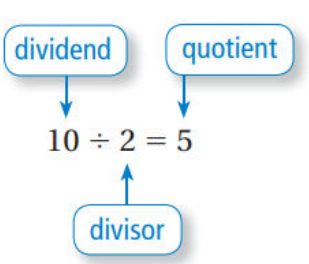
Please, find the following products and show your work in a clear and organised way.

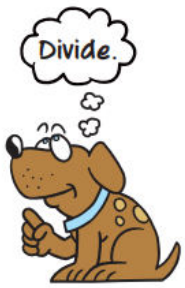
1) 12 x 95 = _____	**2)** 980 x 79 = _____

3) 48 x 61 = _____	**4)** 519 x 71 = _____
5) 157 x 92 = _____	**6)** 510 x 94 = _____
7) 1,054 x 42 = _____	**8)** 2,469 x 22 = _____

Refresher Worksheet 2
Division of Whole Numbers

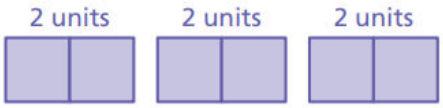
Key Concept and Vocabulary





Visual Model

If you divide 6 units into 3 equal parts, each part will have 2 units.



$6 \div 3 = 2$

Skill Examples

1. $42 \div 6 = 7$

2. $\frac{65}{13} = 65 \div 13 = 5$

3.
$$\begin{array}{r} 13 \\ 15\overline{)195} \\ \underline{15} \\ 45 \\ \underline{45} \\ 0 \end{array}$$

∴ $195 \div 15 = 13$

Application Example

4. Six people find a treasure worth $12,300. If each person receives an equal share, how much does each person get?

$\$12{,}300 \div 6 = \$2050$

∴ Each person gets $2050.

Please, find the following quotients and show your work in a clear and organized way.

1) 1,575 ÷ 63 = _____	**2)** 832 ÷ 52 = _____

3) 658 ÷ 14 = _____	**4)** 2,952 ÷ 72 = _____
5) 1,104 ÷ 23 = _____	**6)** 3,220 ÷ 16 = _____
7) 7,200 ÷ 9 = _____	**8)** 78,182 ÷ 97 = _____

Refresher Worksheet 3
Understanding Decimals

Please, complete the chart. Fill in the whole number tenths, hundredths and thousandths columns with the correct number. Use zeros as placeholders where necessary.

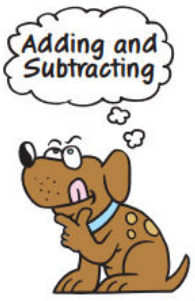
Number	**Whole number**	**Tenths** *(x 10^{-1})*	**Hundredths** *(x 10^{-2})*	**Thousandths** *(x 10^{-3})*
3.751				
4.891				
1.608				
10.540				
9.618				
2.198				
0.208				
0.005				
1.7				
2.398				
6.0				
107.673				

Refresher Worksheet 4
Adding and Subtracting Decimal Numbers

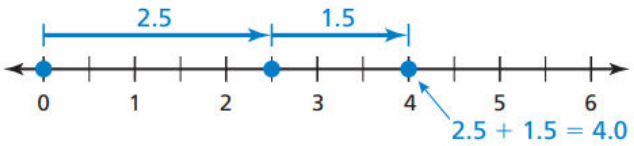
Key Concept and Vocabulary

$$\begin{array}{r} 5.7 \\ +\ 3.36 \\ \hline 9.06 \end{array} \qquad \begin{array}{r} 12.72 \\ -\ 3.84 \\ \hline 8.88 \end{array}$$

Align on decimal point.



Visual Model



Skill Examples

1. $\begin{array}{r} 134.12 \\ +\ 25.485 \\ \hline 159.605 \end{array}$

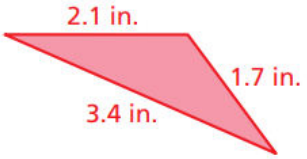
2. $\begin{array}{r} 0.135 \\ +\ 0.14 \\ \hline 0.275 \end{array}$

3. $\begin{array}{r} 32.000 \\ -\ 9.451 \\ \hline 22.549 \end{array}$

4. $\begin{array}{r} 1.405 \\ -\ 0.55 \\ \hline 0.855 \end{array}$

Application Example

5. Find the perimeter of the triangle.



$2.1 + 1.7 + 3.4 = 7.2$

∴ The perimeter is 7.2 inches.

Please, find the following sums or differences. Show your work in a clear and organized way.

1) 32.5 + 82.4 = _____	**2)** 71.8 – 20.2 = _____

3) 144.97 + 837.66 = _____	**4)** 248.23 – 80.89 = _____
5) 206.619 + 93.11 = _____	**6)** 419.6 – 146.48 = _____
7) 3.45 + 5.6 − 2.309 = _____	**8)** 10.0 − (4.57 + 2.35) = _____

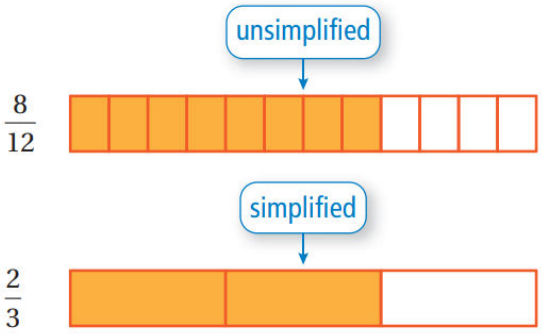
Refresher Worksheet 5
Irreducible Forms of Fractions

Key Concept and Vocabulary

$$\frac{8}{12} = \frac{2 \cdot \cancel{4}}{3 \cdot \cancel{4}} = \frac{2}{3}$$

Divide numerator and denominator by common factor.

Visual Model



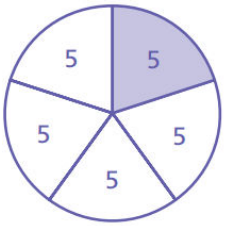
Skill Examples

1. $\frac{2}{4} = \frac{1 \cdot \cancel{2}}{2 \cdot \cancel{2}} = \frac{1}{2}$
2. $\frac{3}{6} = \frac{1 \cdot \cancel{3}}{2 \cdot \cancel{3}} = \frac{1}{2}$
3. $\frac{15}{20} = \frac{3 \cdot \cancel{5}}{4 \cdot \cancel{5}} = \frac{3}{4}$
4. $\frac{80}{100} = \frac{4 \cdot \cancel{20}}{5 \cdot \cancel{20}} = \frac{4}{5}$

Application Example

5. Five of the 25 students in your class have a Facebook account. Write this fraction in simplifed form.

$$\frac{5}{25} = \frac{1 \cdot \cancel{5}}{5 \cdot \cancel{5}} = \frac{1}{5}$$



∴ One-fifth of your class has a Facebook account.

Please, find the irreducible form of each fraction. Show your work.

1) $\frac{16}{18} =$ _____	**2)** $\frac{10}{12} =$ _____
3) $\frac{15}{45} =$ _____	**4)** $\frac{21}{35} =$ _____

Refresher Worksheet 6
Improper Fractions and Mixed Numbers

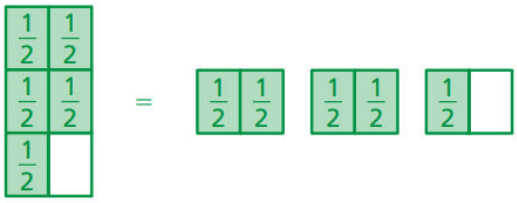
Key Concept and Vocabulary

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

improper fraction — mixed number

Visual Model

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



Skill Examples

1. $\frac{7}{3} = 2\frac{1}{3}$
2. $\frac{8}{4} = 2$
3. $2\frac{1}{4} = \frac{8}{4} + \frac{1}{4} = \frac{9}{4}$
4. $3\frac{3}{5} = \frac{15}{5} + \frac{3}{5} = \frac{18}{5}$

Application Example

5. During a month, you used 13 half-hours of phone time. How many hours did you use?

13 halves → $\frac{13}{2} = 6\frac{1}{2}$ ← 6 and one-half

∴ You used $6\frac{1}{2}$ hours.

Please, write <u>the improper fraction as a mixed number</u> or <u>the mixed number as an improper fraction</u>. Show your work.

1) $\frac{19}{4} =$ _____	**2)** $3\frac{2}{5} =$ _____
3) $2\frac{2}{3} =$ _____	**4)** $\frac{28}{3} =$ _____

Refresher Worksheet 7
Adding and Subtracting Fractions

If the denominators are **not** the same, then you have to use **equivalent fractions** which do have a common denominator. To do this, you need to find the **least common multiple** (LCM) of the two denominators.

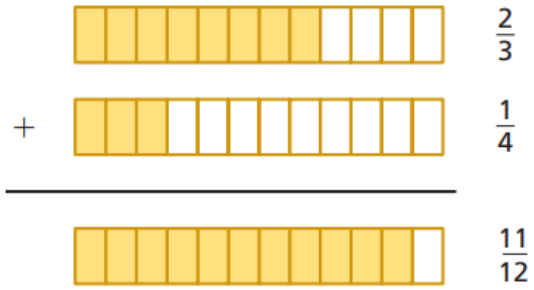
Add $\frac{2}{3}$ and $\frac{4}{6}$

LCM (3,6) = 6

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

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

Visual Model



Skill Examples

1. $\frac{1}{5} + \frac{2}{3} = \frac{1 \cdot 3 + 5 \cdot 2}{5 \cdot 3} = \frac{13}{15}$
2. $\frac{1}{2} + \frac{1}{4} = \frac{1 \cdot 4 + 2 \cdot 1}{2 \cdot 4} = \frac{6}{8} = \frac{3}{4}$
3. $\frac{1}{3} - \frac{1}{4} = \frac{1 \cdot 4 - 3 \cdot 1}{3 \cdot 4} = \frac{1}{12}$
4. $\frac{3}{7} - \frac{2}{5} = \frac{3 \cdot 5 - 7 \cdot 2}{7 \cdot 5} = \frac{1}{35}$

Application Example

5. You ride your bike $\frac{3}{8}$ mile to the store. Then you ride $\frac{1}{6}$ mile to school. How far do you ride altogether?

$\frac{3}{8} + \frac{1}{6} = \frac{3 \cdot 6 + 8 \cdot 1}{8 \cdot 6} = \frac{26}{48} = \frac{13}{24}$

∴ You ride $\frac{13}{24}$ mile.

Please, find the following sums or differences. Show your work in a clear and organized way.

1) $\frac{3}{5} + \frac{2}{7} =$ _____

2) $\frac{11}{15} + \frac{7}{15} =$ _____

3)

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

4)

$\frac{3}{10} + \frac{1}{4} =$ _____

5)

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

6)

$\frac{1}{8} + \frac{1}{9} =$ _____

7)

$\frac{5}{9} + \frac{4}{9} =$ _____

8)

$\frac{2}{3} + \frac{3}{4} + \frac{1}{6} =$ _____

9)

$\frac{11}{12} - \frac{1}{3} =$ _____

10)

$\frac{4}{5} - \frac{1}{10} =$ _____

11)

$\frac{3}{5} - \frac{1}{6} =$ _____

12)

$\frac{7}{8} - \frac{1}{3} =$ _____

13)

$\frac{5}{9} - \frac{2}{5} =$ _____

14)

$\frac{1}{5} - \frac{1}{6} =$ _____

What's My Number Riddles?

Use the clues to find each number.

1)

- If divided by 10, the remainder is 2
- If divided by 4, the remainder is 0
- It is less than 50
- The sum of the digits is 5

What's My Number? _____

2)

- If divided by 3, the remainder is 1
- If divided by 100, the remainder is 0
- It has three digits
- It has less than 400

What's My Number? _____

3)

- If divided by 25, the remainder is 0
- If divided by 8, the remainder is 5
- It is more than 500
- It is less than 600

What's My Number? _____

4)

- If divided by 3, the remainder is 0
- If divided by 53, the remainder is 0
- It is more than 300
- It is less than 500

What's My Number? _____