Dear Students,

Attached you will find a math packet that is to be completed over the summer. The purpose for this packet is to help you to be ready to learn even more this coming school year. The packet is to be completed and handed in, no later than September 11, 2020. It will be graded, so it is very important that you complete it to the very best of your ability.

I hope you have an amazing summer! 2020 - 2021 is going to be a great year to be at Blessed Trinity Catholic School!

Mrs. J. Bonomo
Add Decimals

What is 0.37 + 1.26?

Use the place-value algorithm to add decimals. Regroup as necessary.

- Line up the decimal points.

<table>
<thead>
<tr>
<th>0.37</th>
<th>+1.26</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Add the hundredths.

<table>
<thead>
<tr>
<th>0.37</th>
<th>+1.26</th>
</tr>
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<td></td>
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</tbody>
</table>

- Add the tenths, then add the ones.

<table>
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<th>0.37</th>
<th>+1.26</th>
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- Write the decimal point in the sum.

Regroup 10 hundredths as 1 tenth.

Use base-ten blocks to check.

0.37 + 1.26 = 1.63

So, 0.37 + 1.26 = 1.63.

PRACTICE

Use base-ten blocks to model each problem. Then, write the sum.

1. 4.04 + 3.23
2. 0.49 + 0.7

Use the place-value algorithm to add.

3. 3.73 + 1.25
4. 1.05 + 10.50
5. 1.72 + 9.18
6. 2.07 + 1.4
7. 0.28 + 2.47
8. 0.32 + 0.88
9. 2.57 + 4.86
10. 8.62 + 1.8
11. 4.1 + 3.99
12. 1.11 + 2.95
Subtract Decimals

Find $0.8 - 0.44$.

- Subtract using a model.

- Subtract using place value.

  Line up the decimal points.
  $0.8 = 0.80$

  Subtract the hundredths.

  $0.80$
  
  $-0.44$

  Regroup. Subtract the tenths.

  $0.\underline{8}0$
  
  $0.\underline{4}4$

  $\underline{7}\ 10$

  $-0.\underline{4}4$

  $\underline{6}$

  $0.36$

The difference is $0.36$.

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**PRACTICE**

Regroup. Find the difference.

1. $\frac{0.47}{-0.28} - \frac{0.28}{-0.28}$

   Regroup 47 hundredths as ______ hundredths ______ tenths.

   The difference is ______.

2. $\frac{1.31}{-0.57} - \frac{0.57}{-0.57}$

   Regroup 1 and 31 hundredths as ______ hundredths ______ tenths
   ______ ones.

   The difference is ______.

Find the difference.

3. $\frac{0.53}{-0.15}$

4. $\frac{0.7}{-0.58}$

5. $\frac{5.8}{-0.34}$

6. $\frac{0.41}{-0.1}$

7. $\frac{1.2}{-0.67}$
Divide Whole Numbers

To divide large dividends, repeat the division steps until the division is complete.

\[ 2436 \div 8 = 304 \text{ R}4 \]

\[
\begin{array}{c}
304 \quad \text{R}4 \\
8 \overline{2436} \\
-24 \\
\hline
03 \\
-0 \\
\hline
36 \\
-32 \\
\hline
4
\end{array}
\]

\[ 3 \times 8 = 24 \]
\[ 24 - 24 = 0 \]
\[ 0 \times 8 = 0 \]
\[ 3 - 0 = 3 \]

Check:
(quotient \times divisor) + remainder = dividend

\[ (304 \times 8) + 4 = 2432 + 4 = 2436 \checkmark \]

**PRACTICE**

Divide and check.

1. \( 9 \overline{8316} \)
2. \( 4 \overline{2808} \)
3. \( 6 \overline{5382} \)
4. \( 7 \overline{3751} \)
5. \( 5 \overline{3452} \)
6. \( 8 \overline{3432} \)
7. \( 3 \overline{6784} \)
8. \( 6 \overline{2412} \)
9. \( 4 \overline{2984} \)
10. \( 7 \overline{7179} \)
11. \( 9 \overline{7659} \)
12. \( 5 \overline{1157} \)
Multiply Decimals

A sandwich shop uses 0.25 pound of meat per medium sandwich. How many pounds of meat are needed to make 23 sandwiches for a catering order?

Find 0.25 × 23.

Estimate the product by rounding:

0.3 × 20 = 6

To multiply a decimal by a whole number:

- Multiply as you would with whole numbers.
- Count the number of decimal places in the decimal factor.
- Mark off the same number of decimal places in the product.

The sandwich shop needs 5.75 pounds of meat for the catering order.

PRACTICE

Write the decimal point in each product.

1. \[ \frac{0.5 \times 7}{3.5} \]
2. \[ \frac{3.12 \times 23}{71.76} \]
3. \[ \frac{15.25 \times 31}{472.75} \]
4. \[ \frac{3.264 \times 6.3}{205.632} \]

Use rounding to estimate. Then, find the product.

5. \[ \frac{0.5 \times 1.9}{1.9} \]
6. \[ \frac{0.3 \times 4.2}{4.2} \]
7. \[ \frac{0.31 \times 7}{7} \]
8. \[ \frac{6.54 \times 1.2}{1.2} \]
9. \[ \frac{47.25 \times 1.4}{1.4} \]
10. \[ \frac{1.5 \times 2.7}{2.7} \]
11. \[ \frac{0.81 \times 5.2}{5.2} \]
12. \[ \frac{6.17 \times 4.3}{4.3} \]
13. \[ \frac{51.3 \times 9.5}{9.5} \]
14. \[ \frac{173.9 \times 3.3}{3.3} \]
Divide Decimals

Find 8.55 ÷ 5.

To divide a decimal by a whole number:

Write the decimal point of the quotient above the decimal point of the dividend.

\[
\begin{array}{c|c}
5 & 1.71 \\
\hline
8.55 & \\
-5 & 35 \\
\hline
35 & -35 \\
\hline
05 & -.05 \\
\hline
0 & \\
\end{array}
\]

5 < 8. Enough ones; the quotient begins in the ones place.

\[
1.71 \times 5 \rightarrow 8.55 \leftarrow 2 \text{ decimal places}
\]

The quotient is 1.71.

PRACTICE

Determine the quotient and check your answer.

1. 4)1.6
2. 7)3.5
3. 9)8.1
4. 7)6.3

5. 3)0.84
6. 6)55.56
7. 7)9.45
8. 9)346.32

9. 0.70 ÷ 5
10. 0.38 ÷ 2
11. 0.54 ÷ 3

Compare. Write <, =, or >.

12. 1.62 ÷ 3
13. 0.96 ÷ 4
Expressions

Coleman has three $5 bills and three $10 bills. Javion has one $5 bill and two $10 bills. How much more money does Coleman have?

Create expressions using grouping symbols when needed.

Coleman: \((3 \times 5) + (3 \times 10)\)
Javion: \((1 \times 5) + (2 \times 10)\)

\([(3 \times 5) + (3 \times 10)] - [(1 \times 5) + (2 \times 10)]\)

Simplify step by step. Follow the order of operations.

\[
\begin{align*}
[(3 \times 5) + (3 \times 10)] - [(1 \times 5) + (2 \times 10)]
&= 45 - 25 = 20
\end{align*}
\]

Coleman has $20 more.

**PRACTICE**

Simplify each expression.

1. \(2 \times \left( \frac{34 + 15}{7} \right)\)
2. \(58 + \left( \frac{90 - 36}{9} \right)\)
3. \(3 \times [(5 + 6) - 4]\)
4. \([9 - (18 \div 6)] + (15 \div 5)\)

Write an expression to represent each situation.

5. Marla has the coins shown. Write an expression you could use to find out how much money she has in cents.

6. A theatre has 58 rows with 12 seats and 8 rows with 10 seats. Write an expression to show how many seats there are in all.
Interpret a Fraction as Division

You can interpret a fraction as division: \( \frac{2}{3} = 2 \div 3 \).

You can use division when you rename an improper fraction. Recall that an improper fraction is a fraction in which the numerator is greater than or equal to the denominator.

- Divide the numerator by the denominator. \( \frac{30}{8} = ? \)
- Write the quotient as the whole number part of the mixed number. \( 30 \div 8 = 3 \text{ R} 6 \)
- Write the remainder as the numerator and the divisor as the denominator of the fraction part. \( \frac{30}{8} = 3\frac{6}{8} \)
- Write the fraction part in simplest form. \( 3\frac{6}{8} = 3\frac{3}{4} \)
- If there is no remainder, the improper fraction is a whole number.

In division problems, you can also use the relationship between fractions and division. Sometimes you have to interpret a remainder. Depending on what makes sense, you can keep the fraction, round up, or round down.

Kim buys 20 cups of gravel to be split among 3 reptile habitats. How much gravel does each habitat get?

\[ 20 \div 3 = \frac{20}{3} = 6\frac{2}{3} \]

Each habitat gets \( 6\frac{2}{3} \) cups of gravel since Kim can measure a fraction of a cup.

Tanner has $18 to spend on books. Each book costs $4. How many books can he buy?

\[ 18 \div 4 = \frac{18}{4} = 4\frac{2}{4} \]

He can buy 4 books because he cannot buy \( \frac{2}{4} \) of a book.

PRACTICE

Write each fraction as a mixed number in simplest form.

1. \( \frac{8}{5} \)  
2. \( \frac{11}{7} \)  
3. \( \frac{28}{3} \)  
4. \( \frac{26}{7} \)  
5. \( \frac{7}{6} \)  

6. Kylie is cutting an 8-foot piece of wood into 5 equal pieces. How long will each piece of wood be?

Powers of 10

Use patterns to help you multiply and divide by powers of 10.

Multiplication:
52 \times 10^4 \quad \text{Write 4 more zeros at the end of 52:} \quad 520,000

Division:
31,000,000,000 \div 10^3 \quad \text{Remove 3 zeros from the end of} \quad 31,000,000,000: \quad 31,000,000

PRACTICE

Find each missing number or power of 10.

1. \(1 \times 10^2 = 1 \times _____

2. \(1200 \div _____ = 1200 \div 100

Complete each statement.

3. To find \(14 \times 10^5\), write _____ zeros at the end of 14 to get _____.

4. To find \(870,000 \div 10^3\), remove _____ zeros from the end of 870,000 to get _____.

Find each product or quotient.

5. \(240 \times 10^2 = _____

6. \(30,000,000 \div 10^4 = _____

7. \(280 \times 10^1 = _____

8. \(1301 \times 10^2 = _____

9. \(9,300,000 \div 10^4 = _____

10. \(170,000 \div 10^2 = _____

11. \(10 \times 10^7 = _____

12. \(1,782,012 \times 10^4 = _____

13. \(220,000 \div 10^3 = _____

14. \(803,040,000 \div 10^2 = _____


Graph Number Patterns

Refer to the table. Graph the relationship on the coordinate plane. How does the number of donated cans relate to the weekly sales?

<table>
<thead>
<tr>
<th>Weekly Sales ($)</th>
<th>0</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>400</th>
<th>500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Cans</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
</tbody>
</table>

Rule: Begin with 0; add 100.

Rule: Begin with 0; add 2.

Graph the ordered pairs. Choose an appropriate scale for each axis.

The number of cans is equal to the weekly sales divided by 50.

PRACTICE

Use the table for Exercises 1–3.

<table>
<thead>
<tr>
<th>Pattern A</th>
<th>0</th>
<th>3</th>
<th>6</th>
<th>9</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern B</td>
<td>0</td>
<td>5</td>
<td>10</td>
<td>15</td>
<td>20</td>
</tr>
</tbody>
</table>

1. Write the rule for each pattern.
   Pattern A _______________________
   Pattern B _______________________

2. Write the ordered pairs.
   _______________________

3. Plot the ordered pairs on the coordinate plane.