Dear CLAE Families,

The goal of the Winter Break Packet is to give students an opportunity to continue practicing core skills during this break. The packet includes content that has previously been covered in their math class. This packet should be completed during the break and returned for a grade in Math on Tuesday, January 7th.

**Directions on how to earn full credit on these gradebook assignments:**
1. Submit your completed packet to your Homeroom teacher on the due date – Tuesday, January 7th.
2. Complete your packet neatly.
3. **Math** – Show your work and check over your answers for accuracy.

Math Grade /20 points

Name: ________________________________

Homeroom: ___________________________
A terrible virus has broken out at the North Pole, turning all those who catch it into zombies! Santa's toy factory is currently a living nightmare, zombie elves are taking over! Santa and Mrs Claus are trapped in the factory's basement, afraid that if they come out, they too will catch the virus and become zombies. Luckily for their excellent technology and Wi-Fi coverage, Santa managed to E-mail us to inform what is going on in the North Pole.

Attention: EVERYONE

It started in the middle of the night when only a few of the elves began to act strange. They began feeling sick and their eyes were bloodshot. The nurse took care of them, but after a few hours they all transformed into zombies and charged after the other elves. As the other elves were attacked by the zombies, they too fell ill and transformed into zombies. It wasn't long before my factory was full of zombie elves causing chaos and destroying everything in sight! We are begging for some help here! I don't know how long the basement door will hold them off, and if we all turn into zombies too then this might mean no Christmas this year... or ever again!

Sincerely hoping for some help,

Santa

Something clearly needs to be done and fast before the situation gets worse. We cannot risk the zombie elves getting to Santa and then breaking out of the North Pole to spread the virus around the rest of the world. Sheldon, a quiet and intelligent Shaman from the island of Mathhattan, made the following suggestion shortly after receiving Santa's widespread E-Mail. "This isn't the first time this zombie virus has broken out into our world. It last appeared 500 years ago. I know that a very special and rare cure exists. Unfortunately, what it is and where its kept has long since been forgotten. With a great math detective helping on the case, there is hope that we might identify and find it quick enough to save Santa, Christmas and stop a worldwide epidemic!"

**MATH DETECTIVE NEEDED TO IDENTIFY AND LOCATE THE CURE FOR THE ZOMBIE ELVES**

Sheldon has made a list of all the possible cures and where they can be found. He urgently needs a super detective with math skills to help him solve this case. Hurry before the zombie elves get to Santa and Mrs Claus!
SOLVE THE MYSTERY:
WHAT WILL CURE THE ZOMBIE ELVES?

Detective

(your name)

Has discovered that the cure for the Zombie Elves is:

Where can the cure be found?
(Hint: The information is given in the row of the cure and more information in Clue 5.)

Clues Checklist:

Clue 1 □
Clue 2 □
Clue 3 □
Clue 4 □
Clue 5 □

Teacher to check and tick

Well done! You have discovered what the Zombie Elves need to be cured! Because of your help, the cure was found quickly and the Zombie Elves healed of the virus. You have saved Christmas for everyone!

Oops! No that is not the correct cure for the Zombie Elves. Go over, check your clues and try again. Hurry! They are starting to break into Santa’s basement!
## Possible Zombie Cures

<table>
<thead>
<tr>
<th>Cure Name</th>
<th>Cure Type</th>
<th>Made With?</th>
<th>Created by?</th>
<th>Country</th>
<th>Kept in a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bats blood Elixir</td>
<td>Potion</td>
<td>Magic</td>
<td>Holly The Mystic</td>
<td>United States of America</td>
<td>Science Lab</td>
</tr>
<tr>
<td>The Wizard's Eye</td>
<td>Orb</td>
<td>Lava</td>
<td>Sherman The Witch Doctor</td>
<td>Australia</td>
<td>Cave</td>
</tr>
<tr>
<td>The Wishful Willow's Bark</td>
<td>Potion</td>
<td>Herbs</td>
<td>Zelda The Druid</td>
<td>Germany</td>
<td>Cave</td>
</tr>
<tr>
<td>The Nucleus Tonic</td>
<td>Potion</td>
<td>Herbs</td>
<td>Dr Pewton The Scientist</td>
<td>Canada</td>
<td>Science Lab</td>
</tr>
<tr>
<td>The Shaman's Stormy Sphere</td>
<td>Orb</td>
<td>Lava</td>
<td>Zelda The Druid</td>
<td>Egypt</td>
<td>Tomb</td>
</tr>
<tr>
<td>The Bubble of Wisdom</td>
<td>Orb</td>
<td>Magic</td>
<td>Holly The Mystic</td>
<td>Malta</td>
<td>Tomb</td>
</tr>
<tr>
<td>The Necropolis Boost Juice</td>
<td>Potion</td>
<td>Herbs</td>
<td>Sherman The Witch Doctor</td>
<td>Switzerland</td>
<td>Castle</td>
</tr>
<tr>
<td>The Toxic Healing Orb</td>
<td>Orb</td>
<td>Lava</td>
<td>Holly The Mystic</td>
<td>New Zealand</td>
<td>Science Lab</td>
</tr>
<tr>
<td>The Poison Ivy Oak Antidote</td>
<td>Potion</td>
<td>Herbs</td>
<td>Sherman The Witch Doctor</td>
<td>Japan</td>
<td>Science Lab</td>
</tr>
<tr>
<td>The Phantom Knight's Stone</td>
<td>Orb</td>
<td>Lava</td>
<td>Zelda The Druid</td>
<td>England</td>
<td>Castle</td>
</tr>
<tr>
<td>The Nebulous Gloom of Doom</td>
<td>Orb</td>
<td>Lava</td>
<td>Dr Pewton The Scientist</td>
<td>Thailand</td>
<td>Tomb</td>
</tr>
<tr>
<td>The Stone of The Undead</td>
<td>Orb</td>
<td>Magic</td>
<td>Dr Pewton The Scientist</td>
<td>Russia</td>
<td>Castle</td>
</tr>
<tr>
<td>The Rising Restful Brew</td>
<td>Potion</td>
<td>Lava</td>
<td>Zelda The Druid</td>
<td>Peru</td>
<td>Castle</td>
</tr>
<tr>
<td>The Gnome's Livener Marble</td>
<td>Orb</td>
<td>Lava</td>
<td>Zelda The Druid</td>
<td>Malaysia</td>
<td>Cave</td>
</tr>
<tr>
<td>The Witch's Special Remedy</td>
<td>Potion</td>
<td>Herbs</td>
<td>Holly The Mystic</td>
<td>South Africa</td>
<td>Cave</td>
</tr>
<tr>
<td>The Oracle's Orb of Shadows</td>
<td>Orb</td>
<td>Magic</td>
<td>Sherman The Witch Doctor</td>
<td>India</td>
<td>Castle</td>
</tr>
<tr>
<td>The Mortality Charm</td>
<td>Orb</td>
<td>Lava</td>
<td>Holly The Mystic</td>
<td>Italy</td>
<td>Tomb</td>
</tr>
</tbody>
</table>

Solve the clues and then cross the cures off the list until one remains! The last cure remaining is the one that will heal the zombie elves; the information in that row will also tell you where to find it.
ADDING & SUBTRACTING MIXED NUMBERS – CLUE 1

Crack the code to reveal a clue by adding/subtracting the mixed numbers below. **You must simplify your answers and write as a whole, mixed number or proper fraction.** Use your answers to match and place the letters in the boxes to reveal the clue. Put the letter in every box that it matches your answer in (there may be more than one!) The first one has been done for you!

\[
7 \frac{3}{10} + 4 \frac{3}{10} = \frac{11}{5} \quad W
\]

\[
4 \frac{2}{9} + 1 \frac{5}{9} = \quad I
\]

\[
5 \frac{1}{7} - 1 \frac{6}{7} = \quad T
\]

\[
13 \frac{5}{6} - 4 \frac{1}{6} = \quad C
\]

\[
6 \frac{3}{4} - 4 \frac{1}{4} = \quad A
\]

\[
10 \frac{2}{5} + 2 \frac{2}{5} = \quad M
\]

\[
8 \frac{1}{2} + 1 \frac{1}{4} = \quad R
\]

\[
3 \frac{1}{6} - 2 \frac{1}{3} = \quad O
\]

\[
7 \frac{1}{8} + 2 \frac{1}{4} = \quad E
\]

\[
2 \frac{1}{2} + 3 \frac{1}{10} = \quad P
\]

\[
8 \frac{1}{3} - 4 \frac{2}{3} = \quad H
\]

\[
7 \frac{3}{10} - 6 \frac{1}{5} = \quad U
\]

\[
9 \frac{3}{4} - 5 \frac{3}{8} = \quad L
\]

\[
5 \frac{7}{8} + 1 \frac{1}{4} = \quad S
\]

\[
1 \frac{9}{10} + 1 \frac{4}{5} = \quad N
\]
MULTIPLYING INTEGERS – CLUE 2

Crack the code by multiplying the integers. Use your answers to match and place the letters in the boxes to reveal a clue. Put the letter in every box that it matches your answer in (there may be more than one!)
The first one has been done for you.

-5 × 5 = \[\underline{\text{H}}\] -24 6 22
48 -6 14 14

\[
\begin{array}{cccc}
45 & -45 & 24 & 6 \\
-3 & -48 & 24 & 24 \\
-22 & -6 & 6 & 25 \\
-14 & & & \end{array}
\]

\[
\begin{array}{cccc}
\underline{\text{H}} & & & \\
24 & -25 & 45 & \\
-9 & -24 & 60 & 22 \\
-6 & 45 & -14 & \end{array}
\]

-5 × 5 = \[\underline{-25}\] -2 × 3 = \[\underline{\text{I}}\] -1 × 3 = \[\underline{\text{A}}\]

9 × -5 = \[\underline{\text{X}}\] 7 × -2 = \[\underline{\text{S}}\] 6 × -4 = \[\underline{\text{O}}\]

-5 × -5 = \[\underline{\text{U}}\] -3 × -8 = \[\underline{\text{T}}\] -6 × -6 = \[\underline{\text{F}}\]

-8 × 6 = \[\underline{\text{C}}\] -12 × -4 = \[\underline{\text{W}}\] 3 × -3 = \[\underline{\text{Z}}\]

-9 × -5 = \[\underline{\text{E}}\] -2 × -7 = \[\underline{\text{L}}\] -10 × -6 = \[\underline{\text{M}}\]

-11 × -2 = \[\underline{\text{B}}\] -5 × 12 = \[\underline{\text{N}}\] 2 × -11 = \[\underline{\text{V}}\]

-3 × -2 = \[\underline{\text{R}}\]
CONVERT PERCENTS TO FRACTIONS – CLUE 3

Crack the code by converting the percents to fractions. Fractions must be written in simplest form. Use your answers to match and place the letters in the boxes to reveal a clue. Put the letter in every box that it matches your answer in (there may be more than one!)

The first one has been done for you.

\[
\begin{array}{cccccc}
2 & 23 & 1 & 33 & 3 & 17 \\
\frac{5}{50} & \frac{5}{5} & \frac{10}{100} & \frac{23}{100} & \frac{2}{25} & \frac{37}{100}
\end{array}
\]

\[
\begin{array}{cccccc}
1 & 3 & 9 & 2 & 5 \\
\frac{1}{100} & \frac{3}{10} & \frac{9}{50} & \frac{2}{5} & \frac{1}{2}
\end{array}
\]

\[
\begin{array}{cccccc}
23 & 1 & 9 & 2 & 9 & 1 \\
\frac{23}{50} & \frac{1}{2} & \frac{9}{50} & \frac{2}{25} & \frac{9}{25} & \frac{1}{25}
\end{array}
\]

\[
\begin{array}{cccccc}
S & 33 & 3 & 33 & 11 & 33 \\
\frac{33}{100} & \frac{3}{10} & \frac{33}{100} & \frac{37}{50} & \frac{33}{100} & \frac{17}{50}
\end{array}
\]

\[
\begin{array}{cccccc}
2 & 23 & 1 & 33 & 1 & 9 \\
\frac{2}{5} & \frac{23}{50} & \frac{1}{50} & \frac{33}{100} & \frac{1}{5} & \frac{9}{50}
\end{array}
\]

\[
\begin{array}{cccccc}
37\% = \frac{37}{100} & 25\% = \frac{5}{20} & 2\% = \frac{1}{50} & 40\% = \frac{5}{12}
\end{array}
\]

\[
\begin{array}{cccccc}
33\% = \frac{33}{100} & 4\% = \frac{1}{25} & 8\% = \frac{2}{25} & 22\% = \frac{11}{50}
\end{array}
\]

\[
\begin{array}{cccccc}
17\% = \frac{17}{100} & 46\% = \frac{23}{50} & 15\% = \frac{3}{20} & 18\% = \frac{9}{50}
\end{array}
\]

\[
\begin{array}{cccccc}
20\% = \frac{2}{10} & 50\% = \frac{5}{10} & 1\% = \frac{1}{100} & 36\% = \frac{9}{25}
\end{array}
\]

\[
\begin{array}{cccccc}
30\% = \frac{3}{10} & 34\% = \frac{17}{50}
\end{array}
\]
DIVIDING DECIMALS BY DECIMALS – CLUE 4

Discover a clue by solving the division questions. Use your answers to match and place the letters in the boxes to reveal the clue. Put the letter in every box that it matches your answer in (there may be more than one!) The first one has been done for you!

\[
\begin{array}{ccc}
41 & 8 & 7 \\
9.35 & 186.25 & 3.8 \\
5.2 & 9.6 & 35.75 \\
25.8 & 9.6 & 0.8 \\
1.2 & 9 \\
0.8 & 3.8 & 186.25 \\
\end{array}
\]

\[
\begin{array}{c}
8 \\
0.6 \div 4.8 \\
0.7 \div 7.7 \\
0.5 \div 4.5 \\
0.6 \div 4.2 \\
0.5 \div 20.5 \\
0.4 \div 14.3 \\
0.5 \div 12.9 \\
0.4 \div 74.5 \\
2.8 \div 14.56 \\
5.1 \div 19.38 \\
9.4 \div 11.28 \\
3.8 \div 3.04 \\
1.2 \div 11.52 \\
2.4 \div 22.44 \\
\end{array}
\]

\[
\begin{array}{c}
H \\
I \\
Y \\
E \\
T \\
S \\
M \\
U \\
W \\
R \\
B \\
D \\
A \\
C \\
\end{array}
\]
SOLVING ONE-STEP EQUATIONS – CLUE 5

Crack the code by solving the equations below. Use your answers to match and place the letters in the boxes to reveal a clue. Put the letter in every box that it matches your answer in (there may be more than one!)

\[ 9 = 3o \]
\[ o = \_ \]
\[ n + 4 = 5 \]
\[ n = \_ \]
\[ a - 6 = 3 \]
\[ a = \_ \]
\[ 2u = 4 \]
\[ u = \_ \]

\[ \frac{i}{4} = 1 \]
\[ i = \_ \]

\[ 8 = e + 3 \]
\[ e = \_ \]

\[ 4l = 28 \]
\[ l = \_ \]

\[ \frac{s}{4} = 3 \]
\[ s = \_ \]

\[ 3h = 0 \]
\[ h = \_ \]

\[ \frac{g}{2} = 19 \]
\[ g = \_ \]

\[ 8c = 64 \]
\[ c = \_ \]

\[ \frac{d}{4} = 9 \]
\[ d = \_ \]

\[ t - 2 = 9 \]
\[ t = \_ \]
NAME ________________________________

1. If a + 8 = 16, then a =

2. Circle the greatest number: 8.20  8.02  8.022

3. 0.3 + 0.2 + 0.1 =

For questions 4–7, round to the underlined place value.

4. 26.26 _______

5. 2.81 _______

6. 0.018 _______

7. 15.45 _______

For questions 8–10, use a = 2, b = 3, and c = 8.

8. ac =

9. The sum of a and b is _______.

10. \( \frac{c}{a} = \)
NAME _______________________

1. $0.8 + 0.6 =$

2. If $\frac{x}{3} = 6$, then $x =$

3. Circle the number with the least value: 0.051  3.82  0.05

4. Ten weeks equal ________ days.

5. $10 - 6 + 2 =$

6. $3^2 + 2 =$

7. Right dogs have ________ legs in all.

For questions 8–10, round to the underlined place value.

8. $0.787$ ________

9. $0.506$ ________

10. $2.8$ ________
MINUTE 22

NAME ____________________________

1. \[
\begin{array}{c}
55 \\
\times 55
\end{array}
\]

2. \[8 - 3 + 4 = \]

3. Sixteen quarters equal ________ dollars.

4. \[6(8) = \]

5. \[\frac{28}{4} = \]

6. If \(g - 4 = 18\), then \(g = \)

7. If \(a = 3\), then \(2^a = \)

For questions 8–10, estimate the answer by rounding to the ones place and then applying the correct operation. Number 8 is done for you.

8. \[12.2 + 4.9 = 12 + 5 = 17 \]

9. \[18.9 - 3.6 = \]

10. \[6.9 \times 8.2 = \]
Name ____________________________

1. \(4^2 = \)

2. The product of 6 and 3 is ________.

3. Circle the answer that is equal to \(3 \cdot 3 \cdot 3 \cdot 3\):
   a. \(4^3\)   b. \(3^4\)   c. \(3^3\)   d. 12

4. \(5(3+5) = \)

Use <, >, or = to complete questions 5–7.

5. 4.1 ________ 6

6. 2.08 ________ 2.080

7. 5.03 ________ 5.4

For questions 8–10, round to the underlined place value.

8. 8,842 ________

9. 481.56 ________

10. 0.0083 ________
Creating Equivalent Ratios

Fill in the blank to make an equivalent ratio.

<table>
<thead>
<tr>
<th>54</th>
<th>3</th>
<th>4</th>
<th>6</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>64</td>
<td>5</td>
<td>6</td>
<td>24</td>
</tr>
<tr>
<td>9</td>
<td>8</td>
<td>2</td>
<td>36</td>
<td>8</td>
</tr>
<tr>
<td>8</td>
<td>5</td>
<td>3</td>
<td>10</td>
<td>42</td>
</tr>
</tbody>
</table>

1) \(72 : 64 = 9 : \text{___}\)
2) \(2 : 6 = 14 : \text{___}\)
3) \(\text{___} : 7 = 8 : 14\)
4) \(32 : \text{___} = 12 : 24\)
5) \(\text{___} : 12 = 7 : 14\)
6) \(30 : 36 = 5 : \text{___}\)
7) \(\text{___} : 6 = 4 : 3\)
8) \(1 : 2 = \text{___} : 4\)
9) \(4 : 2 = 20 : \text{___}\)
10) \(6 : \text{___} = 12 : 18\)
11) \(63 : \text{___} = 7 : 2\)
12) \(\text{___} : 5 = 18 : 30\)
13) \(18 : 27 = 16 : \text{___}\)
14) \(6 : \text{___} = 9 : 12\)
15) \(15 : 3 = \text{___} : 1\)
16) \(\text{___} : 4 = 30 : 24\)
17) \(\text{___} : 14 = 1 : 2\)
18) \(6 : \text{___} = 54 : 27\)
19) \(12 : 15 = \text{___} : 45\)
20) \(6 : 2 = \text{___} : 18\)
### Determining Proportionality with Tables

<table>
<thead>
<tr>
<th><strong>Name:</strong></th>
<th><strong>Answers</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Determine if the values in the table are proportional (yes) or not (no).</strong></td>
<td></td>
</tr>
<tr>
<td><strong>1)</strong></td>
<td><strong>2)</strong></td>
</tr>
<tr>
<td>X</td>
<td>Y</td>
</tr>
<tr>
<td>-4</td>
<td>-5</td>
</tr>
<tr>
<td>-3</td>
<td>-6</td>
</tr>
<tr>
<td>-2</td>
<td>-7</td>
</tr>
<tr>
<td>-1</td>
<td>-8</td>
</tr>
</tbody>
</table>

| **4)** | **5)** | **6)** |
| X | Y | X | Y | X | Y |
| 6 | 3 | 1 | 10 | 2 | 2 |
| 7 | 4 | 2 | 20 | 4 | 4 |
| 8 | 5 | 7 | 70 | 8 | 8 |
| 9 | 6 | 10 | 100 | 10 | 10 |

| **7)** | **8)** | **9)** |
| X | Y | X | Y | X | Y |
| 20 | -32 | 70 | -10 | 2 | 7 |
| 15 | -24 | 63 | -9 | 6 | 21 |
| 10 | -16 | 35 | -5 | 18 | 63 |
| 5 | -8 | 21 | -3 | 20 | 70 |

| **10)** | **11)** | **12)** |
| X | Y | X | Y | X | Y |
| -12 | -32 | 9 | 3 | 2 | 4 |
| -9 | -24 | 36 | 6 | 3 | 6 |
| -6 | -16 | 64 | 8 | 4 | 12 |
| -3 | -8 | 81 | 9 | 7 | 21 |
Solve each problem.

1) \(-72 \div (-8) = \) __________
2) \((-1) \times (-7) = \) __________
3) \((24) \div (-4) = \) __________
4) \((-2) \div 2 = \) __________
5) \((-18) \div 2 = \) __________
6) \(7 \times (-8) = \) __________
7) \((9) \div (-9) = \) __________
8) \(-12 \div (-3) = \) __________
9) \(-12 \div (-4) = \) __________
10) \(8 \times (-6) = \) __________
11) \((-3) \times (-1) = \) __________
12) \((-6) \div 2 = \) __________
13) \((-5) \times 2 = \) __________
14) \((18) \div (-6) = \) __________
15) \(-56 \div (-7) = \) __________
16) \(-18 \div (-9) = \) __________
17) \((-9) \times (-3) = \) __________
18) \((-2) \times 8 = \) __________
19) \(2 \times (-5) = \) __________
20) \(-40 \div (-5) = \) __________
<table>
<thead>
<tr>
<th>Solve each problem.</th>
<th>Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) (-45 \div (-9)) =</td>
<td>1. _______</td>
</tr>
<tr>
<td>2) (-6 \div (-2)) =</td>
<td>2. _______</td>
</tr>
<tr>
<td>3) (-10 \div (-2)) =</td>
<td>3. _______</td>
</tr>
<tr>
<td>4) (2 \times (-7)) =</td>
<td>4. _______</td>
</tr>
<tr>
<td>5) ((4) \div (-1)) =</td>
<td>5. _______</td>
</tr>
<tr>
<td>6) ((-6) \times 3) =</td>
<td>6. _______</td>
</tr>
<tr>
<td>7) (-36 \div (-4)) =</td>
<td>7. _______</td>
</tr>
<tr>
<td>8) (1 \times (-8)) =</td>
<td>8. _______</td>
</tr>
<tr>
<td>9) ((-5) \times (-8)) =</td>
<td>9. _______</td>
</tr>
<tr>
<td>10) ((-28) \div 4) =</td>
<td>10. _______</td>
</tr>
<tr>
<td>11) ((20) \div (-5)) =</td>
<td>11. _______</td>
</tr>
<tr>
<td>12) ((-9) \times (-1)) =</td>
<td>12. _______</td>
</tr>
<tr>
<td>13) ((-54) + 9) =</td>
<td>13. _______</td>
</tr>
<tr>
<td>14) (-20 \div (-5)) =</td>
<td>14. _______</td>
</tr>
<tr>
<td>15) ((-35) \div 7) =</td>
<td>15. _______</td>
</tr>
<tr>
<td>16) ((24) \div (-8)) =</td>
<td>16. _______</td>
</tr>
<tr>
<td>17) ((-9) \times 8) =</td>
<td>17. _______</td>
</tr>
<tr>
<td>18) ((-9) \times (-1)) =</td>
<td>18. _______</td>
</tr>
<tr>
<td>19) (5 \times (-2)) =</td>
<td>19. _______</td>
</tr>
<tr>
<td>20) (-63 \div (-7)) =</td>
<td>20. _______</td>
</tr>
</tbody>
</table>