Investigate Data

John’s test grades were: 76, 82, 95, 82, 78, 96, 91. His teacher will allow John to choose the measure of central tendency to be used for his test grades? Which measure should John choose? Why?

Algebraically Speaking

\[
\begin{align*}
\text{Triangle} + \text{Ingot} + \text{Cylinder} &= 21 \text{ lb} \\
\text{Triangle} + \text{Cylinder} &= 12 \text{ lb} \\
\text{Triangle} + \text{Cube} &= 14 \text{ lb} \\
\text{Cylinder} &= ? \\
\text{Cube} &= ?
\end{align*}
\]

Mathmania

Euclid, a Greek mathematician proved that there is no largest prime. Suppose you are Euclid. What kinds of things might you do to prove there is no largest prime? Explain your approach and the things you might try.

Solve It!

Point of View

Bob and his dad visited the hardware store on Saturday. They observed the following transactions: Mr. Harris bought 4 for $0.50, Mrs. Clarke bought 21 for $1.00, Mr. Montaro bought 1,134 for $2.00 and Ms. Park bought 450 for $1.50. What were they buying?

Geometry Rules

Name at least two 3-dimensional figures for which this is a base.

Write On!

Translate into an equation and solve:

Eight more than a number is twenty-seven.
Keeping Skills Sharp

1. \(8,725 + w = 10,619\)
2. \(24.96 \div 80 =\)
3. \(15,234 - 7,500 =\)
4. \(16 + h + 43 = 81\)
5. Write the prime factorization of 56.
6. Find the GCF of 25 and 35.
7. Find the area of the following rectangle:

```
14 m
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/
/```  

Write answers here:

1. ___________
2. ___________
3. ___________
4. ___________
5. ___________
6. ___________
7. ___________
8. ___________
9. ___________
10. __________

Mental Math

Directions to Students:
Write your answers as the questions are called out. Each question will be repeated only once.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Algebraically Speaking

If \( \bigcirc \) represents +1 and \( \bigcirc \) represents -2, then what would the following collection of buttons represent? (1.02)

Investigate Data

For the set \{ 3, 4, 5, 8, x \} the mean, median, and mode all have the same value. What is the value of \( x \)? (4.02)

Geometry Rules

Find the measure of angle \( DIF \). (4.02)

Mathmania

If 100% of \( \square \) is \( \square \) and 50% of \( \square \) is \( \square \), then what is 25% of \( \square \)? (1.01)

Solve It!

A ball is dropped from a height of 48 feet. Each time the ball bounces, it travels back up half the distance from which it fell. How many feet has the ball traveled when it hits the ground for the fifth time? (1.03)

Write On!

Write an equation and solve:

A number increased by 1.6 is nine. (5.03)
Keeping Skills Sharp

Write answers here:

1. $1,007 - d = 248$
2. $4.04 \times 0.89 =$
3. $\frac{3}{4} + \frac{3}{8} =$
4. $45\%$ of $72 =$
5. Write the prime factorization of $144$.
6. Find the Least Common Multiple of $12$ and $16$.
7. A rectangular fence is $27.8$ meters by $34.2$ meters. What is its perimeter?
8. $3 + 2^3 - 5 =$
10. Estimate:
    $46.8 - 32.97$

Mental Math

Directions to Students:
Write your answers as the questions are called out. Each question will be repeated only once.

1
2
3
4
5
6
7
8
9
10
Algebraically Speaking

A basket of 25 peaches weighs 232 ounces. After 10 peaches are removed the basket of peaches weighs nine and a half pounds. Write an algebraic expression to model this problem. How much does the basket weigh?

(1.03)

Investigate Data

In Pollville, records are kept on the previous mayors. Here are the ages of the last six mayors when they were voted into office:

45 88 37 42 41 44

Compare the mean and median. Which is a more representative measure of the average age? Why?

(4.02)

Mathmania

The following chart shows the fund raising goal for a community. About how much money have they collected so far?

(Review)

Solve It!

What is the sum of the first 500 counting numbers? i.e., The sum of $1 + 2 + 3 + 4 + \ldots + 496 + 497 + 498 + 499 + 500$? How about only the odds: $1 + 3 + 5 + 7 + \ldots + 493 + 495 + 497 + 499$?

(Review)

Geometry Rules

A triangle is graphed on a coordinate grid on which each unit is a centimeter. It has vertices at points (2, –8), (2, 5), and (–4, 5). Find its area.

(Review)

Write On!

Translate into an equation and solve.

A number added to eight equals five.

(5.03)
Keeping Skills Sharp

Write answers here:

1. $18 \times k = 90$
2. $w - 0.79 = 7.47$
3. $13\frac{3}{8} - 2\frac{5}{8} =$
4. Rename as a decimal and percent: $\frac{3}{8}$
5. Write the prime factorization of 375.
6. Find the greatest common factor of 24 and 36.
7. Find the area.

8. $24 \div [(7 - 3) \times 2]$
9. Nearest dollar to $624.52$
10. Add: $563.48 + 4.72 + 327$

Directions to Students:
Write your answers as the questions are called out. Each question will be repeated only once.

Mental Math

1
6
2
7
3
8
4
9
5
10
Algebraically Speaking

Translate into an equation and solve:

Nine less than a number is three.

\( x - 9 = 3 \)

Mathmania

Kevin saves \( \frac{3}{4} \) of the money he earns mowing yards each week. He earned $12.25 last week and $17.00 this week. How much will Kevin save in these two weeks?

\[ \text{Savings} = \frac{3}{4} \times (12.25 + 17.00) \]

Investigate Data

On five tests (on which scores could range anywhere from 0 to 100, inclusive) Johnny had an average of exactly 88. Find the lowest score Johnny could have received on one test.

\[ \frac{5x}{5} = 88 \]

Solve It!

Become the director and choose your cast to act this out:

Joey’s little sister, Ella, must take four steps for every three steps Joey takes. Suppose one of Joey’s steps covers 32 centimeters. How far will Ella travel when she has taken 12 steps?

\[ \text{Distance} = \left( \frac{4}{3} \right) \times 32 \times 12 \]

Geometry Rules

Find the perimeter and area of rectangle JKLM. What would be the area and perimeter if the length of JKLM was doubled?

\[ \text{Area} = 10 \times 5 = 50 \text{ cm}^2 \]

\[ \text{Perimeter} = 2(10 + 5) = 30 \text{ cm} \]

Write On!

Sarah said: “I multiplied two numbers and the product is smaller than one of the factors.”

Write a short paragraph explaining how this could happen. What two numbers could Sarah have multiplied? How can the product of two numbers be smaller than one of the original numbers?
Keeping Skills Sharp

Write answers here:

1. \(2007 \div j = 223\)
2. \(22.57 + 7.4 = \)
3. \(\frac{5}{6} - \frac{4\frac{1}{3}}{3} = \)
4. \(37\% \text{ of } 400 = \)
5. Write the prime factorization of 153.
6. Find the least common multiple of 8 and 6.
7. Find the perimeter. 
   \((\text{Right angles at all vertices})\)

Mental Math

Directions to Students:
Write your answers as the questions are called out. Each question will be repeated only once.

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 
9. 
10. 

13 ft
13 ft
5 ft
5 ft
2 ft
5 ft
**Algebraically Speaking**

Write an equation that represents this problem and solve it.

The $37 sale price of a sweater is $16 less than the original price. Find the original price.

(5.03)

**Mathmania**

I spent $27 (plus tax) to purchase 9 items for school. I bought some folders at $2 each, some drawing pens at $3 each, and some large looseleaf notebooks at $5 each. How many folders, pens and notebooks did I buy?

(1.03)

**Investigate Data**

A school secretary has data on the people absent from school for ten days. The absences were: 2, 5, 7, 3, 14, 11, 8, 10, 17, 6 on each of the ten days. If you were going to make a graph of this data, what scale and interval would you use? Explain your choices. What did you consider when choosing the scale? What things did you consider when choosing the interval?

(4.01)

**Solve It!**

A certain factory makes bikes and trikes. Seats come in boxes of six. The workers hate to have any leftovers at the end of their shift. If 59 wheels are sent by the home office, how many boxes of seats should be ordered?

(Review)

**Write On!**

1. One thing I like about math is ____________.
2. One thing I do not like about math is ________.
3. One thing I can do well in math is ____________.
4. One thing I would like to improve on in math is ____________.
5. This year in math I hope my teacher ____________.

(Review)
Keeping Skills Sharp

1. $825 + c + 450 = 1850$
2. $2.72 \div 0.8$
3. $8 - 2 \times m = 2$
4. Rename as a fraction and decimal: $55\frac{5}{9}\%$
5. Write the prime factorization of 180.
6. Find the GCF: 18, 45
7. Find the area:

\[
\text{Area of triangle} = \frac{1}{2} \times \text{base} \times \text{height} = \frac{1}{2} \times 8 \times 12 = 48 
\]

8. $7.4 + (5 - 1)^2$
9. Nearest tenth to: 0.423
10. Estimate: $434 \times 748$

Write answers here:

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 
9. 
10. 

Mental Math

Directions to Students:
Write your answers as the questions are called out. Each question will be repeated only once.

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 
9. 
10. 

14
Algebraically Speaking
Write a word expression for:

\[2p - 3\]  

(Mathematics Essentials, Grade 7, Week 6, 5.03)

Investigate Data
A telemarketer is expected to make a certain number of phone contacts per day. Here is a graph showing the contacts made for one week. What is the mean of this data?

(Mathematics Essentials, Grade 7, Week 6, 4.02)

Mathmania
Using Objects
Place the first six counting numbers in the circles so that the sum on each side of the triangle is nine. Is it possible to use the numbers four to nine to make the sum of each side the same?

(Review)

Solve It!
Susan's age this year is a multiple of 3. Next year her age will be a multiple of 4. If Susan's younger sister is in kindergarten and her older brother is 23, how old is Susan?

(Review)

Geometry Rules
Find the area of the shaded region in the congruent shapes below.

(Right angles at all vertices)

(Review)

Write On!
Your second grade sister is learning about subtraction and she says to you: “When you subtract, you always take the smaller number away from the larger number.” Based on what you have learned about subtracting integers, explain why your sister’s statement is not always true. Write a problem that supports your written explanation.

(Review)
17

**Keeping Skills Sharp**

1. \(14,542 - E = 4,667\)
2. \(3.7 \times B = 0.0333\)
3. \(45 \div 9 + M \times 3 = 23\)
4. 58% of 42 =
5. Write the prime factorization of 141.
6. 40 minutes + 55 minutes + 10 minutes =
   ____ hour(s) ____ minutes
7. Find the circumference:
   \[
   \text{ circumference } \quad 30 \text{ ft}
   \]
8. \(3 \times [5 + (7 - 5)^2] =\)
9. \(2 \times (12 \times 3) = (?) \times 12 \times 3\)
10. Estimate: \(8.907 \times 7.7\)

Write answers here:

1. ___________
2. ___________
3. ___________
4. ___________
5. ___________
6. ___________
7. ___________
8. ___________
9. ___________
10. ___________

**Mental Math**

Directions to Students:
Write your answers as the questions are called out. Each question will be repeated only once.

<table>
<thead>
<tr>
<th>1</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
</tr>
</tbody>
</table>
Algebraically Speaking

Write an equation:
Rita has $5 in her purse. This is $12 less than she had before she went shopping. How much did she have when she went to the mall?

(5.03)

Mathmania

In order to construct trapezoid ABCD, what would the coordinate of point C be?

(Review)

Investigate Data

The data values below are the speeds (in kilometers per hour) of ten trucks traveling on Interstate 95:
80, 65, 70, 60, 60, 70, 73, 70, 59, 46
Construct a box plot to represent this data. Compute the mean. How does the mean compare with the median?

(4.02)

Solve It!

Mo, Ro and Bo have less than 20 tokens. Ro has more than Mo and Mo has more than Bo. Ro gives Bo three tokens and Mo gives Bo two. Now they each have the same number. How many tokens did they start with?

(1.03)

Geometry Rules

Tommy is wrapping a birthday present in a box which has a top with an area of 120 square inches. The front of the box has an area of 96 square inches. The area of the end is 80 square inches. What are the dimensions of the box?

(Review)

Write On!

$7x = 84$

Write a story or situation to “fit” this equation.

(5.03)
Keeping Skills Sharp

1. $15 \times 72 = \phantom{0}$
2. $6 - b + 4 \times 2 = 12$
3. $\frac{9}{16} \times 6 \frac{2}{3} = \phantom{0}$
4. Determine the missing number:
   \{1, 3, 7, 13, \_, \ldots\}
5. Write the prime factorization of 360.
6. Find the GCF of 48 and 54.
7. Find the area:

   \[
   \text{Area} = \pi \times \text{radius}^2
   \]

   \[
   \text{radius} = 15 \text{ m}
   \]

8. $2m - 2 + 49 \div 7 = 15$
9. Nearest thousandth to: 0.0795

Write answers here:
1. ___________
2. ___________
3. ___________
4. ___________
5. ___________
6. ___________
7. ___________
8. ___________
9. ___________
10. ___________

Mental Math

Directions to Students:
Write your answers as the questions are called out.
Each question will be repeated only once.

<table>
<thead>
<tr>
<th>1</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
</tr>
</tbody>
</table>
Algebraically Speaking
Write and solve an equation.

Dee picked 24 apples. This is 8 fewer than Jack picked. How many did Jack pick?

Mathmania
Find a Pattern
$3^1 = 3$, $3^2 = 9$, $3^3 = 27$, $3^4 = 81$; the products have 3, 9, 7, 1 respectively in the one’s place. If you compute $3^{15}$, what number will be in one’s place? Is there a similar pattern for $4^1$, $4^2$, $4^3$, $4^4$…?

Investigate Data
What is the difference between the mean and the median of this set of data?

One number is 12 less than the other. Their product is -32. What is the least value the smaller number could be?

Write On!
Read this statement carefully:
“In an addition problem, the sum is always greater than either of the addends.”

Example: $5 + 4 = 9$  $9 > 5$ and $9 > 4$

Based on what you have learned about adding integers, write an explanation which proves the above statement is false. Explain how a sum can be smaller than one or both of the addends.

Geometry Rules
A rectangular sign has an area of 128 cm$^2$ and a perimeter of 48 cm. The measure of one side is twice the other side. What are the dimensions of the sign?

What is the difference between the mean and the median of this set of data?
Keeping Skills Sharp

1. 1,672 ÷ p = 209
2. 1.4 + n + 3.6 = 7.5
3. 4 ÷ \(\frac{2}{9}\) =
4. 86% of 106 =
5. Write the prime factorization of 104.
6. Find the LCM of 15 and 50.
7. Find the area of this trapezoid:

![Trapezoid diagram]

8. \([6.2 + (8.7 - 4)] \times 10 =\]
9. Nearest dollar to $28.91
10. Nearest integer to \(4.18 ÷ 0.68\)

Write answers here:

1. __________
2. __________
3. __________
4. __________
5. __________
6. __________
7. __________
8. __________
9. __________
10. __________

Mental Math

Directions to Students:
Write your answers as the questions are called out. Each question will be repeated only once.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Algebraically Speaking

Mark has the same secret number hidden in each envelope. The number sentence below is true. What number must be in the envelope?

\[ \boxed{3} + \boxed{3} + \boxed{3} + 180 = 105 \]

Mathmania

You receive a penny on January 1st, two cents the next day, four cents the next and so on, doubling every day. How long will it take to be a millionaire? Suppose you started with a nickel and doubled, how long before you were worth a million dollars?
Keeping Skills Sharp

1. \(3,584 + 8,258 = \) 
2. \(8.87 \div r = 22.175\)
3. \(3\frac{3}{4} \div 1\frac{1}{8} = \)
4. \(\frac{1}{2}\% \text{ of } 50 = \)
5. Write the prime factorization of 189.
6. Find the GCF of 42 and 63.
7. Find the circumference:

8. \(125 - 43 + c = 95\)
9. Nearest thousandth to 0.41275
10. Estimate: \(356 \div 59\)

Write answers here:

1. ___________
2. ___________
3. ___________
4. ___________
5. ___________
6. ___________
7. ___________
8. ___________
9. ___________
10. ___________

Mental Math

Directions to Students:
Write your answers as the questions are called out.
Each question will be repeated only once.

1 __________________  6 __________________
2 __________________  7 __________________
3 __________________  8 __________________
4 __________________  9 __________________
5 __________________  10 __________________
Algebraically Speaking
Write an algebraic equation for the following and solve it:
The product of five hundredths and a number is 11. (5.02, 5.03)

Investigate Data
A math class earned the following set of scores on a test:

<table>
<thead>
<tr>
<th>4</th>
<th>3 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>2 2 6 7 8</td>
</tr>
<tr>
<td>6</td>
<td>0 4 5</td>
</tr>
<tr>
<td>7</td>
<td>1 2 3 3</td>
</tr>
<tr>
<td>8</td>
<td>4 9</td>
</tr>
<tr>
<td>9</td>
<td>3 4 5 9</td>
</tr>
</tbody>
</table>
Create a box plot with these scores. (4.01)

Mathmania
Unit Five of a social studies book starts on page 126 and ends on page 241. How many pages are in the unit? (1.03)

Solve It!
Ten people met at a party. They all exchanged handshakes. How many handshakes were exchanged? (Review)

Geometry Rules
Mrs. Adams is building a miniature table for a dollhouse. The table will be a scale model of her dining room table. The top of her table measures 36 inches wide and 72 inches long. If the width of the miniature table will be 1.5 inches, what will be its length? (3.03)

Write On!
Continue the pattern:
2, 5, 11, 23, ____, ____, ____, ____.
Explain what the pattern is and write an algebraic expression that can be used to continue it. (5.03)
Keeping Skills Sharp

1. \( 23,584 + J = 31,931 \)
2. \( 12 \times 5.6 = B \)
3. \( \frac{5}{12} + \frac{2}{3} = \)
4. What percent of 90 is 36?
5. Write the prime factorization of 200.
6. Find the LCM of 42 and 54.
7. Find the area:

```
| 10.7 m | 12.1 m |
+--------+--------+
| 11.8 m |
```

8. \( 80 - 3 \times 20 = \)
9. Solve for \( n \):
   \( \frac{7}{8} \times \frac{21}{n} = \)
10. A family makes insurance payments of $723 twice a year. About how much does the insurance cost per month?

Write answers here:
1. ___________
2. ___________
3. ___________
4. ___________
5. ___________
6. ___________
7. ___________
8. ___________
9. ___________
10. ___________

Mental Math

Directions to Students:
Write your answers as the questions are called out. Each question will be repeated only once.

<table>
<thead>
<tr>
<th>1</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
</tr>
</tbody>
</table>
Algebraically Speaking

Write and solve an equation:

Nine times a number is 72 thousandths.

(5.02, 5.03)

Mathmania

The lengths of the sides of an 5 m by 5 m square are increased by 3 m. The area of the square has increased by what percent?

(1.01)

Investigate Data

Four middle schools in Cayuga County submitted the following data:

<table>
<thead>
<tr>
<th>School</th>
<th>Mean Height (cm)</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>West MS</td>
<td>162.5</td>
<td>40</td>
</tr>
<tr>
<td>East MS</td>
<td>155.5</td>
<td>52</td>
</tr>
<tr>
<td>North MS</td>
<td>170.0</td>
<td>38</td>
</tr>
<tr>
<td>South MS</td>
<td>168.4</td>
<td>70</td>
</tr>
</tbody>
</table>

What is the mean height (to the nearest cm) of all middle school students in Cayuga County?

(4.05)

Solve It!

Write the rule used to give the output number for the following:

<table>
<thead>
<tr>
<th>input</th>
<th>output</th>
</tr>
</thead>
<tbody>
<tr>
<td>-2</td>
<td>-11</td>
</tr>
<tr>
<td>-1</td>
<td>-8</td>
</tr>
<tr>
<td>0</td>
<td>-5</td>
</tr>
<tr>
<td>1</td>
<td>-2</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

(5.01)

Geometry Rules

Use cubes to build the model pictured. Then draw the front, side, and top view.

Write On!

Write and solve a problem that involves a restaurant bill and a percent.
Keeping Skills Sharp

1. \( M \times 2,000 = 88,000 \)
2. \( 172 - 45.1457 = T \)
3. \( 5 \frac{2}{3} + 3 \frac{3}{4} = \)
4. 78 is 65% of _____.
5. Write the prime factorization of 275.
6. Find the GCF of 64 and 88.
7. Find the area of the shaded region:

![Circle with radius 200 m]

8. \( 24 \div [(8 - 5) \times 2] = \)
9. Nearest tenth to: 8.295
10. John saves $108 each month. About how much will he save in a year?

Write answers here:

1. ___________
2. ___________
3. ___________
4. ___________
5. ___________
6. ___________
7. ___________
8. ___________
9. ___________
10. ___________

Mental Math

Directions to Students:
Write your answers as the questions are called out. Each question will be repeated only once.

| 1 | 6 |
| 2 | 7 |
| 3 | 8 |
| 4 | 9 |
| 5 | 10 |
Algebraically Speaking
Write an equation and solve:
Forty-nine is the square of a number

(5.02, 5.03)

Investigate Data
Shannon’s math scores for this marking period are:

<table>
<thead>
<tr>
<th>9</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
<td>9</td>
</tr>
</tbody>
</table>

Her science scores are 65, 95, 94, 74, 81, 82, 68, 76, 82, 76.

How do her mean and median scores for math and science compare?

(4.05)

Mathmania
At Carowinds, the cotton candy vendor uses a formula to tell him how much cotton candy he will sell.

\[ c = 32 + 0.2v \]

The supply purchasing agent for Carowinds has a formula which tells her how much sugar to buy when she knows how much cotton candy will be sold.

\[ c = 40 + 0.125s \]

On a day when there will be 8,000 visitors, how much sugar should be purchased?

(1.03, 5.03)

Solve It!
A scale drawing of a building is 20 cm wide and 35 cm long. If the actual building is 90 feet wide, how long is the building?

(2.01)

Geometry Rules
If you fold this pattern into a cube, which letter is on the side that is opposite B?

A  B  C  D  E  F

(3.01)

Write On!
Write the numbers \(-5, -4, -3, -2, -1, 0, 1, 2, 3\) in the diagram’s squares so that the sum along each row, column, and diagonal is \(-3\).

(1.02)
Keeping Skills Sharp

Write answers here:

1. $603 \div h = 9$
2. $5.4 + 98.26 + 524.387 = D$
3. $\frac{5}{6} - \frac{2}{5} =
4. 200\% \text{ of } 120 =
5. Write the prime factorization of 490.
6. Find the LCM of 28 and 42.
7. Find the perimeter of a field with sides of 1.7 km, 2.6 km, 1.8 km, 2.1 km.
8. $36 \div [(9 - 5) \times 3] =
9. 256 = \square^2
10. Solve for $M$: $11 + (27 \div 9)^2 \times M = 38$

Mental Math

Directions to Students:
Write your answers as the questions are called out. Each question will be repeated only once.

1
2
3
4
5
6
7
8
9
10
Mental Math

This section provides an opportunity for sharpening students’ mental computation.

1. \( \frac{8}{9} - \frac{1}{9} \)
2. \( \frac{7}{12} + \frac{1}{6} \)
3. 3 yards = ____ feet
4. 2 years = _____ days
5. 5 hours = _____ minutes
6. Rename as a fraction and decimal: 75%
7. 132 ÷ 6
8. \( \frac{1}{6} + \frac{3}{6} \)
9. 56 – 7
10. 3,290 + 90

Mental Math Answers

1. \( \frac{7}{9} \)
2. \( \frac{3}{4} \)
3. 9
4. 730
5. 300
6. \( \frac{3}{4} \); 0.75
7. 22
8. \( \frac{2}{3} \) or \( \frac{4}{6} \)
9. 49
10. 3,380

Algebraically Speaking

\[ n + 8 = 27 \]
\[ n = 19 \]

Write On

\[ \frac{1}{3} \times 7 = 5 \text{ lb.} \]
\[ \frac{3}{4} \times 9 = 7 \text{ lb.} \]

Math Mania

Answers will vary

Solve It

They were purchasing house numbers at 50¢ per numeral.

Investigate Data

mean = 85.7; median = 82

reasons will vary

Keeping Skills Sharp

1. 1,894
2. 0.312
3. 7,734
4. 22
5. \( 2^3 \times 7 \)
6. 5
7. \( A = 168 \text{ m}^2 \)
8. 930
9. 200
10. 9,000

This section provides an opportunity for sharpening students’ mental computation.
Math Mania

Geometry Rules
45°

Solve It
48
24
24
12
12
6
6
3

+ 3
138 ft.

Write On
\[ n + 1.6 = 9 \]
\[ n = 7.4 \]

Mental Math

This section provides an opportunity for sharpening students' mental computation.

1. 35,000 + 6,000
2. 873 – 752
3. 17 \times 1000
4. 40 \times 90
5. 312 + 673
6. \( 2 \frac{7}{8} - 1 \frac{1}{2} \)
7. 66 – 27
8. 10,000 \times 12
9. \( 4 \frac{3}{4} + 5 \frac{1}{8} \)
10. 4 \times 800

Algebraically Speaking

-1

Investigate Data
\[ x = 5 \]

Keeping Skills Sharp

1. 759
2. 3.5956
3. \( 5 \frac{7}{8} \)
4. 32.4
5. \( 2^4 \times 3^2 \)
6. 48
7. 124 m
8. 6
9. 2,400
10. 20 or 14

Mental Math Answers

1. 41,000
2. 121
3. 17,000
4. 3,600
5. 985
6. 1 \frac{3}{8}
7. 39
8. 120,000
9. 9 \frac{7}{8}
10. 3,200
Algebraically Speaking

equations will vary, basket weighs 2 lbs.

Write On
8 + a = 5
a = –3

Solve It
125,250; 62,500

Investigate Data
mean = 49.5
median = 43 more representative

Geometry Rules
39 cm²

Math Mania
$216,000

Mental Math
This section provides an opportunity for sharpening students’ mental computation.

1. 70 × 7
2. 50 × 40
3. \( \frac{4}{9} - \frac{4}{9} \)
4. \( \frac{9}{10} - \frac{4}{10} \)
5. 30 yards = _____ feet
6. 60 inches = _____ feet
7. \( \frac{1}{4} + \frac{1}{8} + \frac{1}{2} = \)
8. \( \frac{7}{4} \times 2 \)
9. \( 2 - \frac{4}{7} - \frac{6}{7} \)
10. If you start your homework at 6:45 p.m. and finish at 9:58 p.m., how much time did you spend on homework?

Mental Math Answers
1. 490
2. 2,000
3. 0
4. \( \frac{6}{10} \) or \( \frac{5}{10} \)
5. 90
6. \( \frac{5}{7} \)
7. \( \frac{7}{8} \)
8. \( \frac{7}{2} \) or \( \frac{3}{2} \)
9. \( 1 \frac{5}{7} \) or \( \frac{12}{7} \)
10. 3 hours and 13 minutes
**Algebraically Speaking**

- \( n - 9 = 3 \)
- \( n = 12 \)

**Math Mania**

- \( \frac{3}{4} \cdot \$12.25 = \$9.1875 = \$9.19 \)
- \( \frac{3}{4} \cdot \$17.00 = \$17.00 = \$12.75 \)

Kevin will save \$21.94 in these two weeks.

**Solve It**

**Joey**
- 1 step = 32 cm
- 3 steps = 96 cm

**Ella**
- 4 steps = 96 cm
- 12 steps = 4 steps \( \times \) 3
  = 96 cm \( \times \) 3 = 288 cm

**Write On**

Students’ answers could include finding a fraction of a number, or multiplying decimal numbers.

**Geometry Rules**

- \( P = 30 \text{ cm}; A = 50 \text{ cm}^2 \)
- If length is doubled, \( P = 50 \text{ cm}; A = 100 \text{ cm}^2 \)

**Investigate Data**

- 40

**Keeping Skills Sharp**

1. 9
2. 29.97
3. \( \frac{1}{2} \)
4. 148
5. \( 3^2 \times 17 \)
6. 24
7. 56 feet
8. 11
9. 0.03
10. 39

**Mental Math**

- If Jim awakes at 6:30 a.m. and leaves for school an hour and ten minutes later, what time does he leave for school?
- \( \frac{1}{2} \times \frac{4}{7} \)
- \( 4 \times k = 20 \)
- \( 4 - \frac{7}{8} \)
- \( \frac{3}{10} + ? = \frac{8}{10} \)
- \( 2 \frac{1}{2} \text{ gallons} = \text{___ quarts} \)
- 12,000 pounds = \text{___ tons}  \( h \div 5 = 7 \)
- \( \frac{1}{5} + \frac{11}{15} \)

**Mental Math Answers**

1. 7:40 a.m.
2. \( \frac{2}{7} \) or \( \frac{4}{14} \)
3. 5
4. \( 2 \frac{1}{8} \)
5. 360
6. \( \frac{5}{10} \) or \( \frac{1}{2} \)
7. 10
8. 6
9. 35
10. \( \frac{14}{15} \)
Solve It
6 boxes of seats will make 11 trikes and 13 bikes with no leftovers.

Algebraically Speaking
\[ p - \$16 = \$37 \]
\[ p = \$53 \]

Geometry Rules
70°

Math Mania
4 folder; 3 pens; 2 notebooks

Investigate Data
Scales and intervals may vary. When choosing scale, students should be sure to include all values of the data. One example of an appropriate scale is 0 to 20. When choosing an interval, students must choose an interval which separates the scale into equal parts. Possible scales for this data are 2 or 4.

Mental Math
This section provides an opportunity for sharpening students’ mental computation.

Mental Math Answers

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ( \frac{2}{5} ) of 45</td>
<td>18</td>
</tr>
<tr>
<td>2. ( 8 - 3 \times \frac{2}{3} )</td>
<td>( 4 \frac{1}{3} )</td>
</tr>
<tr>
<td>3. (? + 9.5 = 10)</td>
<td>0.5</td>
</tr>
<tr>
<td>4. Sum of 25 and 52</td>
<td>77</td>
</tr>
<tr>
<td>5. 1 ( \frac{1}{2} ) pounds = _____ ounces</td>
<td>24</td>
</tr>
<tr>
<td>6. ( 0.2 = \frac{?}{100} )</td>
<td>20</td>
</tr>
<tr>
<td>7. ( \frac{3}{5} \times \frac{5}{6} )</td>
<td>( \frac{1}{2} )</td>
</tr>
<tr>
<td>8. 25</td>
<td>25</td>
</tr>
<tr>
<td>9. 0.0072</td>
<td>0.4</td>
</tr>
<tr>
<td>10. 280,000</td>
<td>8</td>
</tr>
</tbody>
</table>
Algebraically Speaking
Twice a number decreased by three or three less than twice a number.

Investigate Data
+1.4 or 1.4 calls above the target

Geometry Rules
$2 \times 10^3 + 10^2 - 25\pi$
is about 221.5 cm².

Solve It
15 years

Write On
Answers will vary.

Mental Math
This section provides an opportunity for sharpening students' mental computation.

1. $\frac{5}{10} = \%$
2. $\frac{4}{5} \times \frac{15}{20}$
3. $20 - 15.99$
4. $875 + 155 = 155 + ?$
5. $700 \text{ mm } = \_\_\_ \text{ m}$
6. $12.5 \div \frac{1}{2}$
7. Find the LCM of 12 and 20.

Math Mania

They all equal 18.

Keeping Skills Sharp

1. 9,875
2. 0.009
3. 6
4. 24.36
5. $3 \times 47$
6. 1 hour 45 minutes
7. 94.2 feet
8. 27
9. 2
10. 72

Mental Math Answers

1. 100,000
2. 7.53
3. 0.23
4. 50
5. $\frac{3}{5}$
6. $4.01$
7. 875
8. 0.7
9. 25
10. 72
Algebraically Speaking
$5 = n - $12 \quad n = $17

Geometry Rules
$12'' \times 10'' \times 8''$

Math Mania
$(x, y)$ such that $x > -1$, but $\neq 2$
and $y = 3$

Solve It
Two possibilities [Ro, Mo, Bo]
[8, 7, 0] or [9, 8, 1] 18 is the maximum starting
number of tokens.

Write On
Answers will vary. Sample:
84 people are coming to a banquet. Each table seats
7 people. How many tables will be needed for the banquet?

Investigate Data
mean = 65.6
median 67.5

Mental Math
1. $150 \times 2 \div 6 + 7$
2. $84 - 35.8$
3. $\frac{2}{3} \div 8$
4. What is the difference between 452 and 225?
5. $12 \frac{9}{10} - 6 \frac{2}{5}$
6. Rename $\frac{5}{8}$ as a percent.
7. $? + 53.7 = 100$
8. $30 \times 600$
9. $\frac{3}{8}$ of 64
10. $? \times 7.5 + 2 = 12$

Mental Math Answers
1. 57
2. 48.2
3. $\frac{3}{4}$
4. 21
5. $2^3 \times 3^2 \times 5$
6. 6
7. 706.9 m²
8. 5
9. 0.080
10. 7

Keeping Skills Sharp
1. 1.080
2. $b = 2$
3. $\frac{3}{4}$
4. 21
5. $2^3 \times 3^2 \times 5$
6. 6
7. 706.9 m²
8. 5
9. 0.080
10. 7
Algebraically Speaking

24 = j – 8  \quad j = 32

Math Mania

The digit 7 will be in the one's place.

(3^{15} = 14,348,907)

Yes, 4^1 = 4, 4^2 = 16, 4^3 = 64, 4^4 = 256

6, 4, 6, ... Even powers are 6; odd powers are 4.

Solve It

-8

Write On

answers will vary

Investigate Data

mean is 79.6  median is 83

difference is 3.3

Geometry Rules

8 cm by 16 cm

Mental Math

This section provides an opportunity for sharpening students' mental computation.

1. 1 kilometer = _____ meter(s)

2. $\frac{1}{3} = ? \%$

3. $\frac{1}{2} + 5.5$

4. $7^2 - 6.5$

5. $10^3 \times 5^2$

6. $(1,252)^0$

7. $\frac{3}{5} \div \frac{6}{5}$

8. What is the product of 17 and 10?

9. $3^2 - 2^3 + 30$

10. $42 = 51 - ?$

Mental Math Answers

1. 1,000

2. $33 \frac{1}{3}$ or $33.\bar{3}$

3. 9

4. 42.5

5. 25,000

6. 1

7. $\frac{1}{2}$

8. 170

9. 31

10. 9
Algebraically Speaking
–25 in the envelope

Write On
\[ n + 1.8 = 5.03; \ n = 3.23 \]

Math Mania

\[
\begin{align*}
&\text{\$1,000,000.00} & &\text{\$1,000,000.00} \\
&\text{in 27 days} & &\text{in 25 days} \\
&\text{starting with} & &\text{starting with} \\
&\text{\$0.01} & &\text{\$0.05} \\
\end{align*}
\]

Investigate Data
median = 146; 1st quartile = 130; 3rd quartile = 165

Solve It
6 rolls at $95.94

Geometry Rules
4 cm

Mental Math
This section provides an opportunity for sharpening students’ mental computation.

1. Nearest hundredth to 2.346
2. Nearest tenth to 4.62
3. Nearest whole number to 5.7
4. Nearest whole number to 9.8
5. Nearest ten to 23.5
6. Nearest hundred to 462
7. Nearest whole number to 49.8
8. Nearest tenth to 56.992
9. Nearest whole number to 699.5
10. Nearest hundredth to 8.795

Mental Math Answers

1. 2.35
2. 4.6
3. 6
4. 10
5. 20
6. 500
7. 50
8. 57.0
9. 700
10. 8.80
Algebraically Speaking
0.05\(n\) = 11; \(n\) = 220

Geometry Rules
3 inches

Math Mania
116 pages

Solve It!

1. \(6 \times 12 \div 2\)
2. \(3^3 - 9\)
3. \(9 \times 10^3\)
4. \((-13)^2\)
5. \(\frac{3}{4} = r\%\)
6. \(56 = 2 \times m \times 14\)
7. Nearest dollar to: $14.36
8. \(\left(\frac{2}{3}\right)^2\)
9. \(23 - 29 + 5\)
10. 6% of $20

Investigate Data
lower quartile 56.5
median 68
upper quartile 86.5

Write On
47, 95, 191, 383, 767, 1535
2\(n\) + 1 or multiply the previous number by two and add one each time. Students may also find the difference of the terms in the sequence. They may say the difference doubles each time.

Mental Math
This section provides an opportunity for sharpening students’ mental computation.

1. \(6 \times 12 \div 2\)
2. \(3^3 - 9\)
3. \(9 \times 10^3\)
4. \((-13)^2\)
5. \(\frac{3}{4} = r\%\)
6. \(56 = 2 \times m \times 14\)
7. Nearest dollar to: $14.36
8. \(\left(\frac{2}{3}\right)^2\)
9. \(23 - 29 + 5\)
10. 6% of $20
Answer Key

Algebraically Speaking

\[ 9n = 0.072 \]
\[ n = 0.008 \]

Write On

desired will vary

Solve It!
output = five less than three times the input

Investigate Data

164 cm

Geometry Rules

top          front          left side

Mental Math

This section provides an opportunity for sharpening students’ mental computation.

Prime or composite?

1. 2
2. 9
3. 29
4. 51
5. 77
6. 101
7. 231
8. 4,924
9. 1
10. 31

Keeping Skills Sharp

1. 44
2. 126.8543
3. \( \frac{5}{12} \)
4. 120
5. \( 5^2 \times 11 \)
6. 8
7. about 8,584 m²
8. 4
9. 8.3
10. $1,200

Math Mania

answers will vary

output = five less than three times the input

top                   front                   left side

Mental Math

1. prime
2. composite
3. prime
4. composite
5. composite
6. prime
7. composite
8. composite
9. neither
10. prime
Answer Key

Grade 7 Weekly Answer Key

Algebraically Speaking

49 = n^2

n = 7 or -7

Geometry Rules

E will be opposite B

Math Mania

244 pounds

Solve It!

157.5 feet

Write On

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>-5</td>
<td>0</td>
</tr>
<tr>
<td>-3</td>
<td>-1</td>
<td>1</td>
</tr>
<tr>
<td>-2</td>
<td>3</td>
<td>-4</td>
</tr>
</tbody>
</table>

Investigate Data

math has mean of 80.4 and median 81.5; science has mean of 79.3 and median 78.5 Her math scores are slightly better than her science scores.

Mental Math

This section provides an opportunity for sharpening students’ mental computation.

1. \( S - (-8) = 12 \)
2. \( 1,000 \times 4.61 \)
3. \( 10^7 \div 10^2 \)
4. \( 253 \text{ centimeters} = ? \text{ meters} \)
5. \( 5 \times (-5) \)
6. \( 2 \times 7^2 \)
7. Estimate: 53% of 90.
8. Nearest ten thousand to: 46,867
9. \( 8^2 \div 2^3 \)
10. \( \frac{2}{3} = T \% \)

Keeping Skills Sharp

1. 67
2. 628.047
3. \( \frac{13}{30} \)
4. 240
5. \( 2 \times 5 \times 7^2 \)
6. 84
7. 8.2 km
8. 3
9. 16
10. 3

Mental Math

1. 4
2. 4,610
3. \( 10^5 \)
4. 2.53 meters
5. -25
6. 98
7. a little more than 45 (47.7)
8. 50,000
9. 8
10. \( 66\frac{2}{3} \) or 66.6