Mathematics Review Notes for Parents and Students

Grade 6 Mathematics 3rd Nine Weeks, 2013-2014
Grade 6 Mathematics Formula Sheet
2009 Mathematics Standards of Learning

Geometric Formulas

\[ A = \frac{1}{2}bh \]
\[ p = 4s \]
\[ A = s^2 \]
\[ p = 2l + 2w \]
\[ A = lw \]
\[ C = 2\pi r \]
\[ C = \pi d \]
\[ A = \pi r^2 \]

\[ V = lwh \]
\[ S.A. = 2lw + 2lh + 2wh \]

\[ \pi \approx 3.14 \]
\[ \pi \approx \frac{22}{7} \]

Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Unit</th>
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</thead>
<tbody>
<tr>
<td>milligram</td>
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<tr>
<td>gram</td>
<td>g</td>
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<tr>
<td>kilogram</td>
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<td>kiloliter</td>
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<td>millimeter</td>
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<td>centimeter</td>
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<td>meter</td>
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<tr>
<td>kilometer</td>
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<tr>
<td>square centimeter</td>
<td>cm²</td>
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<tr>
<td>cubic centimeter</td>
<td>cm³</td>
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<td>ounce</td>
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<tr>
<td>pound</td>
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<td>yard</td>
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<td>mile</td>
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<td>square inch</td>
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<table>
<thead>
<tr>
<th>Category</th>
<th>Abbreviation</th>
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</thead>
<tbody>
<tr>
<td>Area</td>
<td>A</td>
</tr>
<tr>
<td>Circumference</td>
<td>C</td>
</tr>
<tr>
<td>Perimeter</td>
<td>P</td>
</tr>
<tr>
<td>Surface Area</td>
<td>S.A.</td>
</tr>
<tr>
<td>Volume</td>
<td>V</td>
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</table>

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Content Review: Standards of Learning in Detail
Grade 6 Mathematics: Third Nine Weeks
2013-2014

This resource is intended to be a guide for parents and students to improve content knowledge and understanding. The information below is detailed information about the Standards of Learning taught during the 3rd grading period and comes from the Mathematics Standards of Learning Curriculum Framework, Grade 6 issued by the Virginia Department of Education. The Curriculum Framework in its entirety can be found at the following website.


SOL 6.3
The student will
(a) identify and represent integers
(b) order and compare integers
(c) identify and describe absolute value of integers

(a) Identifying and Representing Integers

Integers are the set of whole numbers and their opposites. Fractions and decimals are NEVER integers.
Positive integers are greater than zero.
Negative integers are less than zero.
Integers get smaller in value as you move to the left on the number line, and larger as you move to the right on the number line.

Example 1: 9º below zero \(-9\)
Example 2: A raise of $5.00 per hour \(+5\)
Example 3: A 13 yard loss on a play \(-13\)
Example 4: An altitude of 5,000 feet \(+5,000\)
Example 5: Withdraw $100.00 from an ATM \(-100\)
Example 6: 10 feet below sea level \(-10\)

Zero is neither positive nor negative.
(b) Ordering and Comparing Integers

We use the symbols < and > to compare two integers.
The number to the right on the number line is always greater.
The number to the left on the number line is always less.
When comparing two negative integers, the negative integer that is closer to zero is greater.

Ordering Integers

Example 1: Write the following integers in order from least to greatest. Use a number line to help order the integers.
-9, +3, -23, +6, -7
Solution: -23, -9, -7, +3, +6

Example 2: Write the following integers in order from greatest to least. Use a number line to help order the integers. Remember, greatest is on the right of the number line.
-11, +15, -16, -13, +11
Solution: +15, +11, -11, -13, -16

Comparing Integers

Example 1: -3 < 4
Example 2: 5 > -1
Example 3: 4 > 0
Example 4: -5 < -1
Example 5: -2 > -3
Example 6: 0 > -3

(c) Identify and describe absolute value of integers

The absolute value of a number is the distance of the number from zero on the number line, regardless of direction.
The absolute value of -12 is 12. The absolute value of +12 is 12.

The symbol for absolute value is to enclose the number between vertical bars:

| -8 | = 8  read  “The absolute value of -8 is equal to 8.”
| 3  | = 3  read  “The absolute value of 3 is equal to 3.”

Example 1: | +4 | = 4  Example 2: | -12 | = 12  Example 3: | -9 | = 9
Integers, SOL 6.3

1. Which of the following is true?
   A. \(-10 > -20\)
   B. \(-50 > 45\)
   C. \(-30 < -35\)
   D. \(25 < -45\)

2. Which point on the number line represents the least integer?

   - A. Q
   - B. R
   - C. S
   - D. T

3. Which statement is not true?
   F. \(-8 > -10\)
   G. \(-6 < 6\)
   H. \(3 > -2\)
   J. \(4 < -9\)

4. Which of the following is true?
   F. \(-16 = 16\)
   G. \(-29 > 24\)
   H. \(-47 < -43\)
   J. \(-70 < -77\)

5. Which statement is true?
   - A. \(-599 > -365\)
   - B. \(4,119 < -3,513\)
   - C. \(-56,803 > -64,122\)
   - D. \(-85 > 89\)

6. Based on the representations shown, which of the following is true?
   - A.
   - B.
   - C.
   - D.
SOL 6.20
The student will graph inequalities on a number line.

An inequality is a mathematical sentence that compares expressions. It contains the symbols <, >, ≤, or ≥.

- An open circle is used when a number is not a solution.
- A closed circle is used when a number is a solution. (or equal to)

An arrow to the left or right shows that the graph continues in that direction. The solution set to an inequality is the set of all numbers that make the inequality true.

Sometimes the variable will not be first in an inequality and the number will be. You want to switch the variable to the front of the inequality so the arrow and sign will point the same way. When you do this, flip your sign.

**Example:**

\[ 2 < m \]

1. Place the variable first, flip the sign, and the number goes at the end of the inequality.

\[ m > 2 \]

2. When you graph with the variable first, the direction of the sign and the arrow will be the same.

Examples:

\[ -9 > x = x < -9 \quad 12 \geq s = s \leq 12 \quad -3 < r = r > -3 \]
Graph Inequalities, SOL 6.20

1. Which number sentence represents the solutions for this graph?

- A $x \geq -2$
- B $x \leq -2$
- C $x > -2$
- D $x < -2$

2. Select all of the characteristics of the graph for $x \leq -9$.

- Circle is open
- Circle is closed
- Graph shaded to the right of the circle
- Graph shaded to the left of the circle
SOL 6.11
The student will
(a) identify the coordinates of a point in a coordinate plane
(b) graph ordered pairs in a coordinate plane

(a) Identifying the coordinates of a point in a coordinate plane

- A **coordinate plane** is formed by the intersection of a horizontal number line and a vertical number line. The number lines intersect at the **origin** and separate the coordinate plane into four regions called **quadrants**.
- The coordinates of a point are represented by the ordered pair \((x,y)\), where \(x\) is the first coordinate and \(y\) is the second coordinate. The order of the coordinates matter. *Think of an airplane. An airplane runs horizontal (x axis) first and then flies vertical (y axis). Coordinates are plotted X axis first, Y axis second.*
- The coordinates of the **origin** are \((0,0)\)
- Quadrants are named in a counterclockwise order. The signs for the quadrants are as follows:
  - Quadrant I \((+,+)\)  Quadrant II \((-,+)\)  Quadrant III \((-,-)\)  Quadrant IV \((+,-)\)
- Coordinates are written \((x,y)\)

The **coordinate plane**
(b) Graphing ordered pairs in a coordinate plane.

To graph the ordered pair (4, 2), start at the origin. Move four units to the right and 2 units up. Then plot the point.

Practice graphing the following points on the coordinate plane below: (-3, -2) (-5, 2) (0, -4) (5, 0)
Coordinate Plane, SOL 6.11

1. On a regular coordinate grid, the point (−7, 10) is in which quadrant?
   - F I
   - G II
   - H III
   - J IV

2. Which ordered pair describes a point with a location in the second quadrant on a coordinate grid?
   - A (−6, −5)
   - B (−6, 5)
   - C (6, −5)
   - D (6, 5)

3. Look at the coordinate grid.

4. On a regular coordinate grid, the point (−7, 10) is in which quadrant?
   - F I
   - G II
   - H III
   - J IV
5 Which coordinate grid has the quadrants correctly labeled?

6 In which quadrant is the point (17, 18) located?
A Quadrant I
B Quadrant II
C Quadrant III
D Quadrant IV

7 Use the given numbers to create an ordered pair representing a point located on the x-axis.

(□, □)

-6 -2 0 3 5
Testing Information

Midpoint Test, 3rd Nine Weeks

The Midpoint Test will include questions from standards 6.3, 6.20, 6.11 (included in this booklet), as well as questions from standards 6.7, 6.5, 6.17, 6.8 and 6.18, which were taught and tested earlier in the school year. Use the 2nd and 3rd Nine Weeks Review Notes for Parents and Students to prepare for this test.

The 3rd Nine Weeks Midpoint Test will be administered February 25th through February 27th, 2014. Check with your child’s teacher for the specific testing date.
SOL 6.12 (calculators/protractors/rulers allowed)
The student will determine congruence of segments, angles and polygons.

- Congruent figures have exactly the same size and the same shape.
- Non-congruent figures may have the same shape but not the same size.
- The symbol for congruency is $\cong$.

**Example:**

![Figure](Image)

- The matching or corresponding angles of congruent polygons have the same measure, and the matching or corresponding sides of congruent polygons have the same measure.
- The direct comparison of congruent or non-congruent figures can be accomplished by placing one figure on top of the other or by measuring all sides and angles.
- Construction of congruent line segments, angles, and polygons helps students understand congruency.

![Line Segments](Image)

![Angles](Image)
SOL Practice Items provided by the VDOE,  
http://www.doe.virginia.gov/testing/sol/standards_docs/mathematics/index.shtml  
Answers are located on the last page of the booklet.

Congruent Shapes, SOL 6.12

1. Pictured is a figure from the cover of Kreig’s CD case.
   Four more figures from the CD case are shown below. Which appears to be congruent to the figure above?

2. Petra drew the angle shown.
   Which figure most likely has an angle that is congruent to the angle Petra drew?

3. Which triangle appears to have 3 congruent angles?

4. Which picture appears to show Steve’s body in an angle congruent to the angle shown above?
Figures $LMNPQR$ and $TUVWXY$ are congruent.

Which line segment in figure $TUVWXY$ must be congruent to $LR$?
SOL 6.13 (calculators, protractors, rulers allowed)
The student will describe and identify properties of quadrilaterals.

**POLYGON (Plane Figure, 2-D Figure)**
A polygon is any three or more sided closed figure, such as triangles, quadrilaterals, pentagons, hexagons, heptagons, octagons, nonagons, and decagons. Standard 6.13 focuses on quadrilaterals, which are 4 sided figures.

The sum of the measures of the angles of a quadrilateral is 360°.

**Examples:**
The sum of the measures of all the angles in this square = 360°. What is the measure of the missing angle on the quadrilateral? Since the sum of the measures of all quadrilaterals is 360°, subtract 68, 126, and 106 from 360. The missing angle is 60°.
• Acute angles are greater than 0° and less than 90°, obtuse angles are greater than 90° and less than 180°, and right angles measure exactly 90°. On the protractor, acute angles take the small number and obtuse angles take the large number.

• **Quadrilaterals** can be classified by the number of parallel sides: a parallelogram, rectangle, rhombus, and square each have two pairs of parallel sides; a trapezoid has only one pair of parallel sides; other quadrilaterals have no parallel sides.

• Quadrilaterals can be classified by the measures of their angles: a rectangle has four 90° angles; a trapezoid may have none, one, or two 90° angles.

• **Quadrilaterals** can be classified by the number of congruent sides: a rhombus has four congruent sides; a square, which is a rhombus with four right angles, also has four congruent sides; a parallelogram and a rectangle each have two pairs of congruent sides.

• A parallelogram has two pairs of opposite sides congruent. A rectangle, which is a parallelogram with four right angles, also has two pairs of opposite sides congruent. A square, which is a parallelogram with four right angles and four congruent sides, also has two pairs of opposite sides congruent.

• A square is a special type of both a rectangle and a rhombus, which are special types of parallelograms, which are special types of quadrilaterals.

• A trapezoid with congruent, non-parallel sides is called an isosceles trapezoid.
Properties of Quadrilaterals, SOL 6.13

1. Which word does not apply to every rectangle?
   A. Parallelogram
   B. Quadrilateral
   C. Polygon
   D. Rhombus

2. Which figure appears to have exactly one pair of parallel sides?
   A. 
   B. 
   C. 
   D. 

SOL Practice Items provided by the VDOE,
http://www.doe.virginia.gov/testing/sol/standards_docs/mathematics/index.shtml
Answers are located on the last page of the booklet.
3 Which figure appears to have exactly one pair of parallel sides and two $90^\circ$ angles?

A

B

C

D

4 What is the sum of the measures of all the interior angles of any quadrilateral?

F $90^\circ$

G $180^\circ$

H $360^\circ$

J $450^\circ$

5 Which two figures always have four congruent sides?

A Rhombus and square

B Rectangle and rhombus

C Square and equilateral triangle

D Parallelogram and rectangle

6 Three angle measures of quadrilateral $WXYZ$ are labeled in the figure.

What is the measure of $\angle WZY$?

A $112^\circ$

B $158^\circ$

C $202^\circ$

D $248^\circ$
7. Which of the following shapes is not a parallelogram?
   A. Trapezoid
   B. Rectangle
   C. Rhombus
   D. Square

8. Which property is common to all quadrilaterals?
   A. Four angles
   B. Four congruent sides
   C. Opposite sides parallel
   D. Opposite angles congruent

9. A trapezoid is a quadrilateral with exactly —
   A. one pair of congruent sides
   B. one pair of parallel sides
   C. four congruent angles
   D. four congruent sides
10 Which figure appears to be a rhombus with four right angles?

- A
- B
- C
- D
SOL 6.15

The student will
a) describe mean as a balance point
b) decide which measure of center is appropriate for a given purpose

- **Mean as a balance point** – the mean of a set of data can be described as the balanced point based on the distribution of the data.

  If you think of scores or the average as a weight distribution, the mean is the number that balances the data. The other measures surround the mean.

- **Measures of central tendency** are types of averages for a data set. They represent numbers that best describe a data set. Mean, median, and mode are measures of central tendency that are useful for describing the average for different situations.

  - **Mean** works well for sets of data with no very high or low numbers.
  - **Median** is a good choice when data sets have a couple of values much higher or lower than most of the others.
  - **Mode** is a good descriptor to use when the set of data has some identical values.

- The **mean** is the numerical average of the data set and is found by adding the numbers in the data set together and dividing the sum by the number of data pieces in the set.

**Example:**

15, 10, 5, 25, 30

For the set of data shown above, the mean is 17. This can be found by adding all the items in the set (which equals 85) and then dividing the number (85) by the number of items in the set (5).

\[ 15 + 10 + 5 + 25 + 30 = 85; \quad \text{then,} \quad 85 \div 5 = 17 \]

- The **median** is the middle value of a data set in ranked order. If there are an odd number of pieces of data, the median is the middle value in ranked order. If there is an even number of pieces of data, the median is the numerical average of the two middle values.
Example: 87, 85, 90, 100, 78

For the set of data shown above, the median is 87. This can be found by putting the numbers in order from least to greatest and finding the middle number.

Step 1: Order the numbers from least to greatest: 78, 85, 87, 90, 100
Step 2: Find the middle number. The number that is in the middle is 87.

Sometimes there are two middle numbers. 4, 7, 10, 12, 14, 17
In this case, find the mean of the two middle numbers. 11 would be the median.

- The mode is the piece of data that occurs most frequently. If no value occurs more often than any other, there is no mode. If there is more than one value that occurs most often, all these most-frequently-occurring values are modes. When there are exactly two modes, the data set is bimodal.

Examples:

- For 2, 3, 4, 5, 5, 6, 7, 8, 8, 8, 9, 11, the mode is **8**.
- For 2, 3, 4, 5, 5, 5, 7, 8, 8, 8, 9, 11, the modes are **5 and 8** (bimodal).
- For 2, 3, 4, 5, 6, 7, 8, 9, 11, 13, 17, there is **no mode**.

- The **Outlier** is a number that is numerically distant from the rest of the data. If students scored 100, 89, 92, 79, and 23 on the exam, then the outlier is 23 because it is **distant** from the other scores.

Balance point can be determined with a number line. The X’s can “hop” to the balance point, or you can solve mathematically.

List the numbers 0, 1, 2, 2, 3, 3, 3, 10. Add all the numbers and divide by 8, this is the mean. The mean is the balance point. The balance point is 24.

0 + 1 + 2 + 2 + 3 + 3 + 3 + 10 = 24
Measures of Central Tendency, SOL 6.15

1. Look at the table.

<table>
<thead>
<tr>
<th>Day</th>
<th>Number Sold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>121</td>
</tr>
<tr>
<td>Tuesday</td>
<td>111</td>
</tr>
<tr>
<td>Wednesday</td>
<td>108</td>
</tr>
<tr>
<td>Thursday</td>
<td>111</td>
</tr>
<tr>
<td>Friday</td>
<td>139</td>
</tr>
</tbody>
</table>

What was the mean number of lunches sold last week?

A 105  
B 111  
C 118  
D 130

2. What is the median of the following list of numbers?

33, 21, 42, 19, 42, 12

A 26  
B 27  
C 30  
D 42

3. Which statement is false?

A A set of data always has a mode.  
B A set of data may have exactly one mode.  
C A set of data may have more than one mode.  
D The mode is the piece of data that occurs most frequently.

4. The data below lists the number of pages in each book Harry read last summer.

225, 157, 144, 312, 281, 276, 166

What is the median of the data?

A 168  
B 223  
C 225  
D 312
5 Look at the table.

<table>
<thead>
<tr>
<th>Class</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theater Arts</td>
<td>8</td>
</tr>
<tr>
<td>Creative Writing</td>
<td>6</td>
</tr>
<tr>
<td>Cooking</td>
<td>11</td>
</tr>
<tr>
<td>Pottery</td>
<td>12</td>
</tr>
<tr>
<td>Computer Animation</td>
<td>13</td>
</tr>
</tbody>
</table>

According to the table, what is the mean number of students enrolled in a class?

F 7
G 10
H 11
J 50

6 If a data set has an odd number of data and is in numerical order, then the middle value represents the —

A median
B range
C mean
D mode

7. What is the median of the data shown?

38, 50, 43, 33, 35, 30, 64, 43, 41

A 34
B 35
C 41
D 43
Look at the table.

<table>
<thead>
<tr>
<th>Day</th>
<th>Number Sold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thursday</td>
<td>36</td>
</tr>
<tr>
<td>Friday</td>
<td>25</td>
</tr>
<tr>
<td>Saturday</td>
<td>18</td>
</tr>
<tr>
<td>Sunday</td>
<td>33</td>
</tr>
</tbody>
</table>

What is the mean of the number of tickets sold over these four days?

A  25  
B  27  
C  28  
D  29  

This line plot shows the number of letters in the names of 7 students.

![Line plot](image)

Each X represents 1 student.

What is the balance point for this set of data?

A  5 letters  
B  6 letters  
C  7 letters  
D  8 letters
Testing Information

3rd Nine Weeks Test

The 3rd Nine Weeks Test will include questions from all standards taught since the beginning of the school year. Use the 1st and 2nd Nine Weeks Review Notes for Parents to prepare for the 3rd Nine Weeks Test.

The 3rd Nine Weeks Test will be administered from March 25th to April 2nd 2014. Check with your child’s teacher for the specific testing date.

The following pages contain links to video clips, vocabulary lists, and activities that can be used to review math information that is relevant for this grading period.
Math Smarts!
Math + Smart Phone = Math Smarts!

Need help with your homework? Wish that your teacher could explain the math concept to you one more time? This resource is for you! Use your smart phone and scan the QR code and instantly watch a 3 to 5 minute video clip to get that extra help. (These videos can also be viewed without the use of a smart phone. Click on the links included in this document.)

**Directions:** Using your Android-based phone/tablet or iPhone/iPad, download any QR barcode scanner. How do I do that?
1. Open Google Play (for Android devices) or iTunes (for Apple devices).
2. Search for “QR Scanner.”
3. Download the app.

After downloading, use the app to scan the QR code associated with the topic you need help with. You will be directed to a short video related to that specific topic!

*It’s mobile math help when you need it! So next time you hear, “You’re always on that phone” or “Put that phone away!” you can say “It’s homework!!”*

Access this document electronically on the STAR website through Suffolk Public Schools.
(http://star.spsk12.net/math/MSInstructionalVideosQRCodes.pdf)

**PLEASE READ THE FOLLOWING:**
This resource is provided as a refresher for lessons learned in class. Each link will connect to a YouTube or TeacherTube video related to the specific skill noted under “Concept.” Please be aware that advertisements may exist at the beginning of each video.
<table>
<thead>
<tr>
<th>SOL</th>
<th>Concept</th>
<th>Link</th>
<th>QR Code</th>
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<tbody>
<tr>
<td>6.3</td>
<td>Identifying and representing integers</td>
<td><a href="https://www.youtube.com/watch?v=Gipfg9PI6yc">https://www.youtube.com/watch?v=Gipfg9PI6yc</a></td>
<td><img src="https://example.com/qr_code1" alt="QR Code" /></td>
</tr>
<tr>
<td>6.3</td>
<td>Graphing Integers on a Number Line and Absolute Value</td>
<td><a href="https://www.youtube.com/watch?v=yHxSy1UJIl4">https://www.youtube.com/watch?v=yHxSy1UJIl4</a></td>
<td><img src="https://example.com/qr_code2" alt="QR Code" /></td>
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<tr>
<td>6.3</td>
<td>Comparing and Ordering Integers</td>
<td><a href="https://www.youtube.com/watch?v=ihYUalntq9Y">https://www.youtube.com/watch?v=ihYUalntq9Y</a></td>
<td><img src="https://example.com/qr_code3" alt="QR Code" /></td>
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<tr>
<td>6.11</td>
<td>Coordinate Plane: naming quadrants, plotting points, etc.</td>
<td><a href="https://www.youtube.com/watch?v=r16I6LB2YbQ">https://www.youtube.com/watch?v=r16I6LB2YbQ</a></td>
<td><img src="https://example.com/qr_code4" alt="QR Code" /></td>
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<tr>
<td>6.12</td>
<td>Determining congruence of line segments, angles, and polygons</td>
<td><a href="http://www.youtube.com/watch?v=kv5wORq1Zk4">http://www.youtube.com/watch?v=kv5wORq1Zk4</a></td>
<td><img src="https://example.com/qr_code5" alt="QR Code" /></td>
</tr>
<tr>
<td>Section</td>
<td>Topic</td>
<td>Resource Link</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>6.15</td>
<td>Mean as Balance Point</td>
<td><a href="https://www.youtube.com/watch?v=9of5gI9Yg00">https://www.youtube.com/watch?v=9of5gI9Yg00</a></td>
<td></td>
</tr>
<tr>
<td>6.20</td>
<td>Graphing Simple Inequalities on Number Line</td>
<td><a href="https://www.youtube.com/watch?v=Rbg6PQCN2Cs">https://www.youtube.com/watch?v=Rbg6PQCN2Cs</a></td>
<td></td>
</tr>
</tbody>
</table>
### SOL 6.3

<table>
<thead>
<tr>
<th>integers</th>
<th>The set of whole numbers and their opposites. { ... -3, -2, -1, 0, 1, 2, 3...}</th>
</tr>
</thead>
<tbody>
<tr>
<td>opposites</td>
<td>Two numbers that are the same distance from zero on the number line</td>
</tr>
<tr>
<td></td>
<td>Example: +4 and -4 are opposites</td>
</tr>
<tr>
<td>positive integers</td>
<td>Numbers that are greater than zero</td>
</tr>
<tr>
<td></td>
<td>Examples: +1, 5, +20, 100</td>
</tr>
<tr>
<td>negative integers</td>
<td>Numbers that are less than 0</td>
</tr>
<tr>
<td></td>
<td>Examples: -1, -5, -20, -1,000</td>
</tr>
<tr>
<td>absolute value</td>
<td>The distance between the number and 0 on a number line.</td>
</tr>
<tr>
<td></td>
<td>The absolute value of -2 is 2 [</td>
</tr>
</tbody>
</table>

### SOL 6.20

<table>
<thead>
<tr>
<th>inequality</th>
<th>A mathematical sentence that compares expressions. It contains the symbols</th>
</tr>
</thead>
<tbody>
<tr>
<td>(&lt;)</td>
<td>• Is less than (\leq), or (\geq)</td>
</tr>
<tr>
<td>(\geq)</td>
<td>• Is greater than or equal to (\leq), or (\geq)</td>
</tr>
<tr>
<td>(\leq)</td>
<td>• Is less than or equal to (\leq), or (\geq)</td>
</tr>
<tr>
<td>(\geq)</td>
<td>• Is greater than or equal to (\leq), or (\geq)</td>
</tr>
<tr>
<td>variable</td>
<td>A letter that represents an unknown number</td>
</tr>
</tbody>
</table>
**SOL 6.11**

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>coordinate plane</td>
<td>A plane in which a horizontal number line and a vertical number line intersect</td>
</tr>
<tr>
<td>horizontal number line</td>
<td>X-axis right to left</td>
</tr>
<tr>
<td>vertical number line</td>
<td>y-axis top to bottom</td>
</tr>
<tr>
<td>origin</td>
<td>The intersection point of the x axis and y axis (0,0)</td>
</tr>
<tr>
<td>ordered pair</td>
<td>A pair of numbers that is used to locate a point in a coordinate plane (x,y)</td>
</tr>
<tr>
<td>quadrants</td>
<td>The four regions created by the two intersecting number lines</td>
</tr>
</tbody>
</table>

**SOL 6.12**

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>corresponding</td>
<td>The parts of congruent figures that match</td>
</tr>
<tr>
<td>congruent</td>
<td>Same size and same shape</td>
</tr>
<tr>
<td>non-congruent</td>
<td>Not having the same size and same shape</td>
</tr>
<tr>
<td>≅</td>
<td>Symbol for congruency</td>
</tr>
<tr>
<td><strong>quadrilateral</strong></td>
<td>A polygon with four sides</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td><strong>360°</strong></td>
<td>The sum of the measures of angles of a quadrilateral</td>
</tr>
<tr>
<td><strong>parallelogram</strong></td>
<td>A quadrilateral whose opposite sides are parallel and opposite angles are congruent</td>
</tr>
<tr>
<td><strong>rectangle</strong></td>
<td>A parallelogram with four right angles</td>
</tr>
<tr>
<td><strong>square</strong></td>
<td>A rectangle with four congruent sides or a rhombus with four right angles</td>
</tr>
<tr>
<td><strong>rhombus</strong></td>
<td>A parallelogram with all sides congruent</td>
</tr>
<tr>
<td><strong>parallel</strong></td>
<td>Two or more lines, found in the same plane, that remain the same distance apart</td>
</tr>
<tr>
<td><strong>perpendicular</strong></td>
<td>Lines are perpendicular if they meet to form right angles</td>
</tr>
<tr>
<td><strong>perpendicular bisector</strong></td>
<td>A line which cuts a line segment into two equal parts at 90°</td>
</tr>
<tr>
<td><strong>right angle</strong></td>
<td>An angle whose measure is 90°</td>
</tr>
<tr>
<td><strong>plane figure</strong></td>
<td>A two dimensional figure</td>
</tr>
<tr>
<td><strong>polygon</strong></td>
<td>A closed, two dimensional figure formed by three or more straight sides</td>
</tr>
<tr>
<td><strong>trapezoid</strong></td>
<td>A quadrilateral with one pair of parallel sides</td>
</tr>
<tr>
<td><strong>kite</strong></td>
<td>A quadrilateral with two pairs of congruent angles and no parallel sides</td>
</tr>
</tbody>
</table>
### SOL 6.15

<table>
<thead>
<tr>
<th><strong>data</strong></th>
<th>Information, often numerical, which is gathered for statistical purposes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>measures of central tendency</strong></td>
<td>Numbers that are used to describe the center of a set of data; includes the mean, median, and mode</td>
</tr>
<tr>
<td><strong>mean</strong></td>
<td>The sum of the numbers in a set of data divided by the number of pieces of data (the balance point of the distribution of data)</td>
</tr>
<tr>
<td><strong>median</strong></td>
<td>The middle number in a set of data when the data are arranged in numerical order. If the data has an even number, the median is the mean of the middle numbers.</td>
</tr>
<tr>
<td><strong>mode</strong></td>
<td>The number(s) or item(s) that appear most often in a set of data</td>
</tr>
<tr>
<td><strong>outlier</strong></td>
<td>A number in a set of data that is a distance from the other numbers in the data set and skews the</td>
</tr>
</tbody>
</table>
### SOL 6.13 Activity – Cut apart and match.

<table>
<thead>
<tr>
<th>What’s my name?</th>
<th>What’s my name?</th>
</tr>
</thead>
<tbody>
<tr>
<td>rectangle</td>
<td>square</td>
</tr>
<tr>
<td>quadrilateral</td>
<td>parallelogram</td>
</tr>
<tr>
<td>rhombus</td>
<td>trapezoid</td>
</tr>
</tbody>
</table>
Released Test Answers (3rd Nine Weeks)

SOL 6.3 (Integers)
1. A
2. C
3. J
4. H
5. C
6. D

SOL 6.20 (Graph Inequalities)
1. A
2. [Graph shown with circle shaded and shaded to the left of the line]

SOL 6.11 (Coordinate Plane)
1. G
2. B
3. B
4. G
5. F
6. A
7. [0, 0] Any combination of (x, y) with 0 as the y.

SOL 6.13 (Properties of Quadrilaterals)
1. D
2. B
3. A
4. H
5. A
6. A
7. A
8. A
9. B
10. D

SOL 6.12 (Congruent Shapes)
1. F
2. B
3. J
4. C
5. TY

SOL 6.15 (Measures of Central Tendency)
1. C
2. B
3. A
4. C
5. G
6. A
7. C
8. C
9. C