Geometry Midterm Review 2018 Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**To prepare for the midterm:**

* **Look over your portfolios, tests, and power words**
* **Do this packet**

**Unit 0 Pre Requisite Skills**

**I Can:**

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| Solve equations including equations with fractions. | | |
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| Identify the slope and the y-intercept given a linear equation. | | |
| 1. The standard form of a linear equation is: | | 1. The point-slope form of a linear equation is: |
| 1. Write a linear equation with a slope of 2/3 and a y-intercept of -5. | | 1. Write a linear equation in point-slope form with a slope of 1/6 and passes through the point (-5, 8). |
| Get linear equation into “y=” form. | | |
| 1. Put this equation in “y=” form: 2-3y=11+x | | 1. Put this equation in “y=” form: 3/8x+4y=6 |
| Determine whether a set of lines are parallel, perpendicular, or neither given their equations. | | |
| 1. Parallel lines have \_\_\_\_\_\_\_\_\_\_\_\_\_\_ slopes. | | 1. Perpendicular lines have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ slopes. |
| 1. Determine if these lines are parallel, perpendicular, or neither: | | 1. Determine if these lines are parallel, perpendicular, or neither: |
| Write equations of parallel and perpendicular lines. | | |
| 1. Write an equation of a line parallel to y = 2*x* – 4 and passes through point (4, 6) | | 1. Write an equation of a line perpendicular to y = 2*x* – 4 and passes through point (4, 6) |
| Write a linear equation given 2 points. | | |
| 1. What is the equation of the line that passes through the points (-5, 9) and (-4, 7). | | |
| Simplify, add, subtract, and multiply radicals | | |
| 1. Simplify: | 1. Simplify: | |
| Find the 3rd side of a right triangle using the Pythagorean Theorem. | | |
| 1. Daniel rides his bicycle 21 km west and then 18 km north. How far is he from his starting point? | 1. A telephone pole support cable attaches to the pole 20 feet high. If the cable is 25 feet long, how far from the bottom of the pole does the cable attach to the ground? | |

**Unit 1 Basic Constructions**

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| Define bisect, midpoint, median, altitude. | |
| 1. To bisect means to divide a segment into two   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. | 1. A midpoint divides a segment into two \_\_\_\_\_\_\_\_\_\_\_   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |
| 1. A median is drawn from a vertex to the   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of its opposite side. | 1. An altitude is drawn from a vertex   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to its opposite side. |
| Classify triangles using angles and sides. | |
| 1. A triangle with all equal sides is   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   1. A triangle with 2 equal sides is   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   1. A triangle with no equal sides is   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   1. A right triangle has a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ angle. 2. An obtuse triangle has one angle that is greater   than \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ degrees.   1. An acute angle has all 3 angle less than   \_\_\_\_\_\_\_\_\_\_\_\_\_ degrees. | 1. Classify the triangle using angles and sides. |
| Construct equilateral and isosceles triangles. | |
| 1. Construct an equilateral triangle. | 1. Construct an isosceles triangle. |
| Inscribe a square and hexagon in a circle. | |
| 1. Inscribe a square in a circle of any size. | 1. Inscribe a hexagon in a circle of any size. |
| Copy a segment. | |
| 1. Copy the segment. | |
| Copy and bisect an angle. | |
| 1. Copy the angle, and then bisect it. | |
| Construct a perpendicular bisector. | |
| 1. Construct a perpendicular bisector. | |
| Construct a median on a triangle. | |
| 1. Construct the median from vertex A to side BC.   http://etc.usf.edu/clipart/38600/38604/triwent11_38604_lg.gif | |
| Construct an altitude of a triangle. | |
| 1. Construct the altitude from vertex B to side AC.   http://etc.usf.edu/clipart/38600/38604/triwent11_38604_lg.gif | |

**Unit 2 Rigid Motion**

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| Identify reflections, translations, rotations, dilations, lines of symmetry, point symmetry, rotational symmetry, and angles of rotation, degree and order of rotation. | | | | |
| 1. Identify the transformation: | | 1. Identify the transformation: | | 1. Identify the transformation: |
| 1. Identify the transformation: | | 1. Identify the transformation: | | 1. Identify the transformation: |
| 1. A) Draw lines of symmetry.   B) Write the order and degree of rotational symmetry.  C) Does the figure have point symmetry | | | | |
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| Apply ABCD preservation method for rigid motion | | | |
| 1. Is this rigid motion? Explain why or why not using the properties of rigid motion? | 1. Is this rigid motion? Explain why or why not using the properties of rigid motion? | | |
| Determine opposite or direct isometries and orientation | | | |
| 1. What is the difference between a direct and opposite isometry? | | | 1. Describe the orientation of this figure. |
| Apply transformation rules to figures in the coordinate plane. | | | |
| 1. Apply the following Rotations and state the new coordinates. | | | |
| 1. Reflect over the x-axis. | | 1. Reflect over the y-axis. | |
| 1. Reflect over y=x. | | 1. T(-4, -2) | |
| Identify sequences of rigid motion given the pre-image and image of a figure. | | | |
| 1. Describe the sequence of rigid motion that maps Figure A onto Figure B. | | 1. Describe the sequence of rigid motion that maps Figure A onto Figure B. | |
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**Unit 3 Unknown Angles**

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| Write good definitions and identify complementary, supplementary, vertical, adjacent, alternate interior, alternate exterior, corresponding, interior on the same side angles. | |
| 1. Solve for x and justify your reasoning. | 1. Solve for x and justify your reasoning. |
| 1. Solve for x and justify your reasoning. | 1. Solve for x and justify your reasoning. |
| 1. Solve for x and justify your reasoning. | 1. Solve for x and justify your reasoning. |
| Apply segment and angle addition. | |
| 1. Find DE. |  |
| Identify geometry’s undefined terms. | |
| 1. The three undefined terms in geometry are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
| Apply the reflexive, symmetric, and transitive postulates. | |
| 1. Match the properties:   **\_\_\_\_\_\_\_**  **\_\_\_\_\_\_\_**  **\_\_\_\_\_\_\_** | *Addition Property of Equality*  *Reflexive Property of Equality*  *Symmetric Property of Equality*  *Transitive Property of Equality* |
| Draw auxiliary lines and use them to finding angles.  Calculate angles using parallel lines theorems and auxiliary lines. | |
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| Write algebraic proofs using the following theorems:   * + The sum of angles on a straight line is 180.   + The sum of adjacent angles around a point is 360.   + Vertical angles are congruent | |
| 1. Write an algebraic proof to solve for x. | 1. Write an algebraic proof to solve for x. |
| Find the slope and midpoint given two points.  Determine the slopes of parallel lines and perpendicular lines. | |
| 1. The slope formula is:   The endpoints of  are  and . What is the slope of ? | 1. The midpoint formula is:   The endpoints of  are  and . What are the coordinates of the midpoint of ? |
| 1. *M* is the midpoint of . If the coordinates of *A* are  and the coordinates of *M* are , what are the coordinates of *B*? | 1. What is the slope of a line perpendicular to the line whose equation is ? |
| 1. Two lines are represented by the equations  and . For which value of *m* will the lines be parallel? | 1. What is an equation of the line that passes through the point  and is perpendicular to the line whose equation is ? |
| 1. Write the equation of the ***perpendicular*** bisector that goes through the line segment with the endpoints of A(1,2) and B(-2, 8).   *Hint: Find the midpoint of segment AB and its slope first. Next, write the equation with a negative reciprocal slope and passing through that midpoint.* | |
| Write **coordinate geometry proofs** using distance, midpoint and slope formulas. | |
| 1. Given: Triangle ABC with A(3, 7), B(1, 3), and C(5, 1)   Prove Triangle ABC is a right triangle. | |
| 1. Given: Quadrilateral LMNO with the coordinates L(-2,3), M(4,3), N(2,-2) and O(-4,-2)   Prove: LM || NO and MN || OL | |

**Unit 5 Triangles**

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| Find the measures of angles using the sum of interior angles of a triangle theorem, and exterior angle of a triangle theorem. | |
| 1. Solve for x. | 1. Solve for x. |
| Draw and label the parts of an isosceles triangle.  Apply the Isosceles Triangle Theorems. | |
| 1. In an isosceles triangle the altitude drawn to the base is also the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and the   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. | |
| 1. Solve for x and justify your reasoning. | |
| Determine the sides of a triangle using the triangle inequality theorem. | |
| 1. Which set of numbers may represent the lengths of the sides of a triangle?   (a) {2,5,9} (b) {6,6,7} (c) {6,4,2} (d) {7,8,1} | |
| Apply the largest angle across from the longest side theorem, and the exterior angle inequality theorem. | |
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| Determine the equation of a perpendicular bisector. | |
| 1. Find the equation of the perpendicular bisector of the segment with endpoints A(1, 3), B(5, 5). | |

**Unit 6 Triangle Congruence**

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| Identify corresponding parts of congruent triangle.  Identify and Apply the Triangle Congruence Theorems – AAS, ASA, SSS, SAS, HL (not AAA, ASS). |
| 90. |
| Prove triangles are congruent.  Write 2 column proofs! |
| |  |  | | --- | --- | | Statements | Reasons | |  |  |   Prove: |
| Prove parts of triangles are congruent using CPCFC or CPCTC. |
| |  |  | | --- | --- | | Statements | Reasons | |  |  | |
| Apply isosceles triangle theorems in proofs. |
| |  |  | | --- | --- | | Statements | Reasons | |  |  | |

Now, check your answers with the key on the website!! If you get any incorrect, go back and redo them until you have mastered that concept!

There are no secrets to success. It is the result of preparation, hard work, and learning from failure.   
***Colin Powell***