G is for Googol – Marissa Moss

1. Prove that opposite sides of a rhombus are parallel.

CCSS - Math: G.CO.11 Prove theorems about parallelograms. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.

2. If triangle ABC is an equilateral triangle, and side AB have a length of 12.5 *cm* and angle A is 60 degrees construct triangle ABC.

CCSS - Math: G.CO.13 Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.

3. What is an obtuse tringle?

CCSS - Math: G.CO.10 Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.

4. There are 100 freshman, 100 sophomores, 75 juniors, and 125 seniors. If the principle randomly selects one student to win a 25 dollar Walmart card, what is the probability that it will be a freshman?

CCSS - Math: 7.SP.5 Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around $\frac{1}{2}$ indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.

5. What is the line of symmetry given the equation $y = x^2 + 4x + 3$

CCSS - Math: F.IF.4 For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.

6. What would two feet be if it was converted to inches?

CCSS - Math: 4.MD.1 Know relative sizes of measurement units within one system of units including *km, m, cm; kg, g; lb., oz.; l, ml; hr., min, sec*. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two- column table. For example, know that 1 *ft*. is 12 times as long as 1 *in*. Express the length of a 4 *ft*. snake as 48 *in*. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36).

7. With the given information construct a Venn diagram. At Grenada High School there are 30 students on the basketball team, and there are 90 students on the football team. It is 20 students on both the basketball team and the football team. By making a Venn diagram what is the union of the students on the basketball and football team?

CCSS - Math: S.CP.1 Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events ("or," "and," "not").

8. What is the probability of flipping a coin 5 times such that each time the coins lands on tail?

CCSS - Math: S.IC.2 Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. For example, a model says a spinning coin falls heads up with probability 0.5. Would a result of 5 tails in a row cause you to question the model?

9. Solve the equation for x: $2x - (5x+3) = 6x + 9$

CCSS - Math: 6.EE.5 Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

10. Given the equation: $y = 2x-5$, what is the y-intercept?

CCSS - Math: 8.EE.6 Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b.