

Math Standards for PS Example

MAFS.912.F-IF: Functions: Interpreting Functions

F-IF.3.7a

Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. ★

- a Graph linear and quadratic functions and show intercepts, maxima, and minima.
 - b Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.
 - c Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.
 - d Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior.
- Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude, and using phase shift.

MAFS.912.G-CO—Geometry: Congruence

G-CO.1.1:

Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.

G-CO.3.9:

Prove theorems about lines and angles; use theorems about lines and angles to solve problems. *Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.*

MAFS.912.G-GPE: Geometry: Expressing Geometric Properties with Equations

MAFS.912.G-GMD: Geometry: Geometric Measurement and Dimension

G-GMD1.1

Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. *Use dissection arguments, Cavalieri's principle, and informal limit arguments.*

G-GMD.1.3

Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.

G-GPE.2.5

Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).

G-GPE.2.7

Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.