

Worksheet 2

Theme: Geometry Galaxy Quest

Name:

Class:



Section 1: Coordinate Geometry – Landing Zone

Plot: A(2,1), B(6,5), C(9,2), D(4,-2)

- Prove if shape is a parallelogram
- Use **distance and slope formulas**



Section 2: Volume of a Space Pod

Space pod = cylinder with hemispherical top

- Radius = 3 ft, Height = 7 ft
Find:
- **Volume** of the entire pod
- Use $V = \pi r^2 h + (2/3)\pi r^3$



Section 3: Angle of Entry

A satellite enters orbit at a **55° angle**, followed by a right turn of **90°**.

- Find the **third angle** of the triangle
- Use the Law of Sines to find side lengths (one side = 5 km)



Section 4: Planetary Orbits & Circles

Orbit A: radius 7, Orbit B: radius 14

- Find **circumference** of both
- Are the orbits **similar**? Explain why



Bonus Section: Cross-Section Challenge

Draw and label **two different 2D cross sections** of a **cone-shaped rocket booster**.

- Describe their shapes
- Explain how slicing changes geometry