

Name _____



Friday Night Volumes - Math Under the Stadium Lights

Under the glow of the stadium lights, every part of a football game - from the bleachers to the snack stand - involves **3D shapes**. In this worksheet, you'll calculate **volumes of composite solids** that appear in the real world of sports.

Use the formulas for **prisms, cylinders, cones, spheres, and pyramids** - and remember that **composite solids** are made up of **two or more 3D shapes** combined or removed.

1. The Gatorade Cooler - The team's drink cooler is a **cylinder** (radius 15 cm, height 40 cm) with a **hemispherical lid** of the same radius. Find the **total volume** of the cooler.

2. The Stadium Light Cover - Each stadium light has a **conical cover** (radius 6 cm, height 10 cm) attached to a **cylindrical bulb holder** (same radius, height 5 cm). Find the **combined volume** of one light cover.

3. The Football Trophy - The trophy has a **rectangular prism base** (12 cm \times 10 cm \times 8 cm) topped by a **golden football**, modeled as a **sphere** with a radius of 5 cm. Find the **total volume** of the trophy.

4. The Popcorn Container - Each container is shaped like a **truncated cone**, made from a **large cone** (radius 7 cm, height 15 cm) with a **smaller cone** (radius 3 cm, height 5 cm) removed from the top. Find the **volume of popcorn** that fits inside.

5. The Stadium Bench - A new aluminum bench is made of a **rectangular prism seat** (length 180 cm, width 25 cm, height 5 cm) supported by two **cylindrical legs** (radius 3 cm, height 40 cm). Find the **total volume of material** used.

6. The Stadium Archway - The main entrance arch is modeled as a **half cylinder** (radius 4 m, length 10 m). Find the **volume of the archway**.