

LESSON 119 Cross Sections and Solids of Revolution

1. The resulting solid is a cylinder with radius 5 inches and height 2 inches.
2. $V = \pi r^2 h = \pi(5)(5)(2) = 50\pi \text{ in}^3$
3. Answers may vary. Possible answers: a circle, a rectangle, an ellipse
4. The resulting solid is a cone with radius 5 inches and slant height 8 inches.
Use the Pythagorean Theorem to find that the height of the cone is $\sqrt{39}$.
5. $V = \frac{1}{3} \pi r^2 h = \frac{1}{3} \pi (5)(5)(\sqrt{39}) \approx 52\pi \text{ in}^3$
6. Answers may vary. Possible answers: a circle, a triangle, an ellipse, a parabola
7. The resulting solid is a cylinder with radius 2 inches and height 5 inches.
8. $V = \pi r^2 h = \pi(2)(2)(5) = 20\pi \text{ in}^3$
9. Answers may vary. Possible answers: a circle, a rectangle, an ellipse
10. The resulting solid is two cones that share a base. The height of each cone is 1 cm and the radius of the base is 5 cm.
11. $V = 2 \text{ cones} = 2 \cdot \frac{1}{3} \pi r^2 h = 2 \cdot \frac{1}{3} \pi (5)(5)(1) = (50/3)\pi \text{ in}^3$
12. Answers may vary. Possible answers: a circle, a rhombus, a quadrilateral, an ellipse