

Geometry (Open)

Give exact answer. Do not use decimal approximations for radicals and π . Fractions and radicals must be in the simplified form.

- _____ 1. Find the number of vertices of a polyhedron that has 12 faces and 30 edges.
- _____ 2. The length of the apothem of a regular hexagon is $5\sqrt{3}$ cm. Find the area of the hexagon.
- _____ 3. A circular pizza has diameter 20 inches. A slice making a central angle having measure 30° is cut from this pizza. What is the area of this slice?
- _____ 4. The lengths of the sides of a triangle are 77, 36, and 85 cm. Find its area.
- _____ 5. A 5 ft. tall woman is standing 12 ft away from a 20 ft. tall street light. How long is her shadow?
- _____ 6. Find the area of the circumscribed circle of an equilateral triangle whose altitude has length $9\sqrt{3}$ cm.
- _____ 7. Find the surface area of a right circular cylinder with top and bottom whose radius is 10 cm and height is 6 cm.
- _____ 8. If the area of a circle of radius $R = 3$ cm. is equal to the area of a square of diagonal D cm. what is D ?
- _____ 9. What is the degree measure of each interior angle of a regular pentagon?
- _____ 10. The hypotenuse of a $30^\circ - 60^\circ - 90^\circ$ has length 30 in. Find its area.
- _____ 11. A cube is inscribed in a sphere with radius 6 in. Find the volume of the cube.
- _____ 12. Find the area of the circle passing through the points $(0, 0)$, $(-3, -3)$ and $(3, -3)$.
- _____ 13. Find the volume of a right square pyramid if the edge of the square base is 9 in and the height of the pyramid is 5 in.