Evaluating formulas in word problems HW: Show work

1. $T = \pi r l + \pi r^2$ is the formula for finding the total surface area on a right circular cone, where r is the radius and l is the slant height. Find the surface area for a cone with **Diameter** 6 in. and slant height 9 in.

2. The volume of a cube is $V = s^3$, where V represents volume and s represents the side length of a cube. If the volume is 8 cubic meters, what is the length of a side?

3. The area of a rhombus is found by $A = \frac{1}{2} d_1 d_2$, where each diagonal is represented by d. If the area of the rhombus is 64 square feet and one diagonal is 4 feet, find the other diagonal.

4. In engineering, the formula $K = \frac{1}{2} mv^2$ is used to find the kinetic energy (K), when m is mass and v is velocity. If K = 200 joules and m = 4 kilograms, find v.

5. If the Celsius temperature is 70, find the Fahrenheit temperature. Verify using BOTH formulas below.

$$°C = \frac{5}{9}(°F - 32)$$
$$°F = \frac{9}{5}°C + 32$$