

For each problem, sketch a diagram and include the dimensions of the shape. Show the formulas used, show the substitution of values into the formula and then solve.

1. Wrapping a Gift Box

Lena wants to wrap a gift box shaped like a rectangular prism. The box is **10 inches long, 6 inches wide**, and **4 inches tall**.

What is the total surface area of the gift box that she needs to cover with wrapping paper?

2. Painting a Storage Cabinet

A small cabinet is shaped like a rectangular prism with dimensions of **3 feet wide, 2 feet deep**, and **6 feet tall**.

If paint covers the **entire outside** of the cabinet (except the bottom), how much surface area will need to be painted?

3. Building a Dog House

A rectangular dog house has a length of **5 feet**, width of **4 feet**, and a height of **3.5 feet**.

If the dog house is to be painted on **all six sides**, how many square feet of paint will be needed? (Assume there are no doors or windows.)

4. Tent Covering

A camping tent is shaped like a triangular prism. The two triangular faces each have a **base of 8 feet** and a **height of 5 feet**. The tent is **12 feet long**.

What is the total surface area of the tent, including the floor and all sides, that needs to be covered with waterproof material?

5. Aquarium Design

A unique aquarium is shaped like a triangular prism. The triangular faces have a base of **6 meters** and height of **4 meters**, and the prism is **10 meters long**.

Calculate the total surface area of the glass required to construct the aquarium (assume it's closed on all sides).
