

Judith works after school at her family's tent company. One of their best selling tents is an A-frame tent that is 4 ft. high and has a rectangular bottom 4ft. wide by 6 ft. long. The sides of the tent are 4.5 ft. long. How much canvas is needed to make the tent?

$$H = 4\text{ft}$$

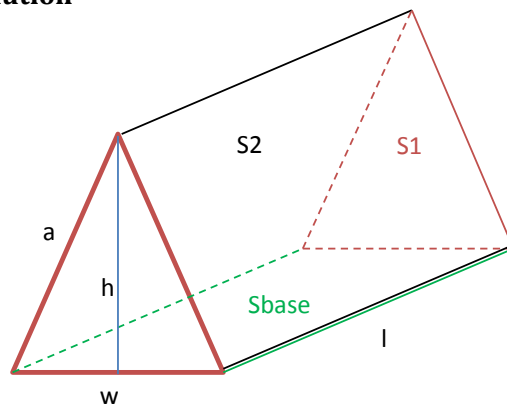
$$W = 4\text{ft}$$

$$L = 6\text{ft}$$

$$A = 4.5\text{ ft}$$

$$S = ?$$

Solution



$$S = 2*S1 + 2*S2 + S_{\text{base}}$$

Where:

S1 - area of the triangle

S2 - area of the rectangle

S_{base} - area of the bottom

Find area of the bottom by the formula:

$$S_{\text{base}} = w * l = 4 * 6 = 24 \text{ ft}^2$$

Find area of the triangle by the formula:

$$S1 = \frac{1}{2} * w * h = 0.5 * 4 * 4 = 8 \text{ ft}^2$$

Find area of the rectangle by the formula:

$$S2 = a * l = 4.5 * 6 = 27 \text{ ft}^2$$

Then substitute the resulting values in the general formula:

$$S = 2 * 8 + 2 * 27 + 24 = 94\text{ft}^2.$$

Answer

Need 94 ft² of the canvas.