

**Welding  
Area Quiz**

Name

*Key*

1. 1. A customer wants metal cutouts of the following shapes from a 4' x 8' sheet of metal. Estimate if there is enough material to make the cuts by finding the areas and comparing with the area of the sheet of metal.

Cuts:

2 - 12" x 36" rectangle

2 - 12" x 24" rectangle

1 - 24" x 36" rectangle

$$4' = 4 \times 12 = 48''$$

$$8' = 8 \times 12 = 96''$$

Sheet of metal

$$A = 48 \times 96$$

$$A = 4608 \text{ in}^2$$

material available

$$12 \overset{36}{\boxed{\phantom{00}}}$$

$$A = 12(36)$$

$$A = 432$$

$$\times 2 \boxed{\phantom{00}}$$

$$A = 864 \text{ in}^2$$

$$12 \overset{24}{\boxed{\phantom{00}}}$$

$$A = 12(24)$$

$$A = 288$$

$$\times 2 \boxed{\phantom{00}}$$

$$A = 576 \text{ in}^2$$

$$24 \overset{36}{\boxed{\phantom{00}}}$$

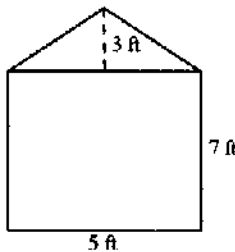
$$A = 24(36)$$

$$A = 864 \text{ in}^2$$

$$A_{\text{material needed}} = 864 + 576 + 864 = 2304 \text{ in}^2$$

Should be enough, depending upon layout.

2. The diagram shows the dimensions of the front of a storage building. What is the area of the entire front of the building?



$$A_{\Delta} = \frac{1}{2}bh$$

$$A = \frac{1}{2}(5)(3)$$

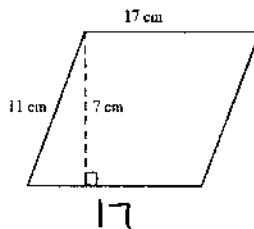
$$A = 7.5 \text{ ft}^2$$

$$A_{\square} = lw$$

$$A = 5(7)$$

$$A = 35 \text{ ft}^2$$

$$A_{\text{building}} = 7.5 + 35 = 42.5 \text{ ft}^2$$



3. Find the area.

$$A = bh$$

$$A = 17(7)$$

$$A = 119 \text{ cm}^2$$

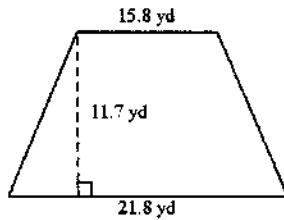


Diagram not to scale.

4. Find the area.

A.  $92.43 \text{ yd}^2$

B.  $219.96 \text{ yd}^2$

C.  $127.53 \text{ yd}^2$

D.  $43.9.92 \text{ yd}^2$

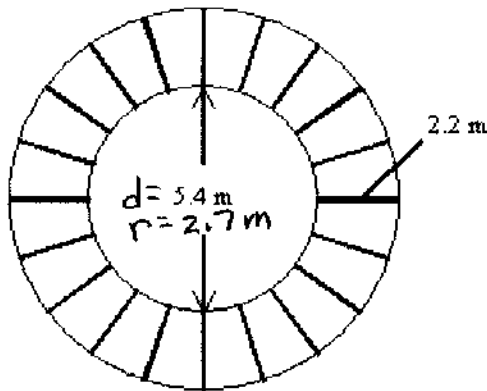
$$A = \frac{1}{2}(b_1 + b_2)h$$

$$A = \frac{1}{2}(15.8 + 21.8)(11.7)$$

$$A = \frac{1}{2}(37.6)(11.7)$$

$$A = 219.96 \text{ yd}^2$$

5. The figure represents the overhead view of a deck surrounding a hot tub. What is the area of the deck? Round to the nearest tenth.



$$d = 5.4 + 2.2 + 2.2$$

$$d = 9.8$$

$$r = 4.9$$

$$A_{\text{hot tub}} = \pi r^2 = \pi (2.7)^2$$

$$A = 22.9 \text{ m}^2$$

$$A_{\text{hot tub w/ deck}} = \pi r^2 = \pi (4.9)^2$$

$$A = 75.4 \text{ m}^2$$

$$A_{\text{deck}} = A_{\text{HT w/ deck}} - A_{\text{HT}}$$

$$= 75.4 - 22.9$$

$$A_{\text{deck}} = 52.5 \text{ m}^2$$