# TAKS PROBLEMS ON AREAS OF COMPOSITE FIGURES

Below are examples of problems in multiple choice format that involve areas of composite figures. Try solving the problems before looking at the solutions. (Cover the solutions with a piece of paper.) Then check your solutions against the ones given.

1. What is the approximate area of the shaded region in the triangle shown?
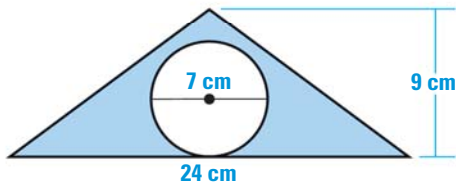
A 45.9 cm^2

B 69.5 cm^2

C 97.0 cm^2

D 141.5 cm^2

Solution

$$\begin{array}{c}\text{Area of} \\ \text{shaded region} \\ (cm^2)\end{array} = \begin{array}{c}\text{Area of} \\ \text{triangle} \\ (cm^2)\end{array} - \begin{array}{c}\text{Area of} \\ \text{circle} \\ (cm^2)\end{array}$$

$$= \frac{1}{2}bh - \pi r^2$$

$$= \frac{1}{2}(24)(9) - \pi(3.5)^2$$

$$\approx 69.5 \text{ cm}^2$$

The correct answer is B.

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2. Carpet costs $2.50 per square foot. What is the total cost to carpet the living room and dining room shown?
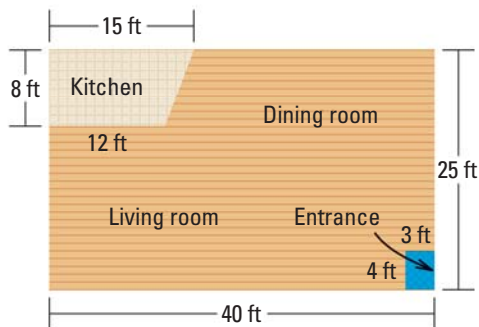
F $880

G $1230

H $1930

J $2200

Solution

To find the total cost of the carpet, first find the area that will be carpeted.

$$\begin{array}{c}\text{Carpeted} \\ \text{area} \\ (ft^2)\end{array} = \begin{array}{c}\text{Total} \\ \text{area} \\ (ft^2)\end{array} - \left(\begin{array}{c}\text{Area of} \\ \text{kitchen} \\ (ft^2)\end{array} + \begin{array}{c}\text{Area of} \\ \text{entrance} \\ (ft^2)\end{array}\right)$$

$$= (40)(25) - \left[\frac{1}{2}(15 + 12)8 + (3)(4)\right]$$

$$= 1000 - 120$$

$$= 880 \text{ ft}^2$$

$$\begin{array}{c}\text{Carpet} \\ \text{cost} \\ (dollars)\end{array} = \begin{array}{c}\text{Carpeted} \\ \text{area} \\ (ft^2)\end{array} \times \begin{array}{c}\text{Carpet} \\ \text{price} \\ (dollars/ft^2)\end{array}$$

$$= 880 \times 2.50$$

$$= \$2200$$

The correct answer is J.

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