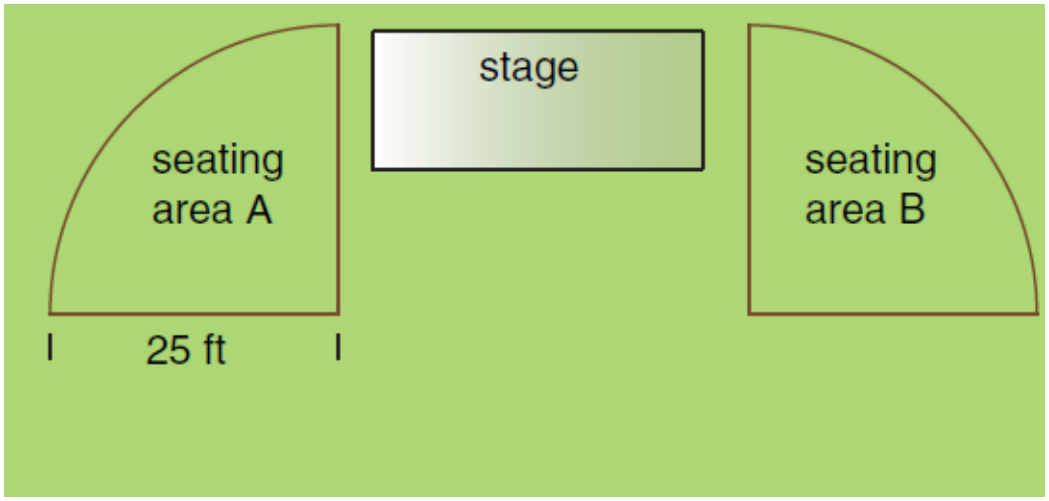
Composite Figures and Pricing

1. The seating areas at an outside graduation ceremony need to be sectioned off, by rope, as shown in the diagram. The rope costs $0.72/ft. How much will the rope cost?



Step 1: Calculate the perimeter of the seating areas.

The sections that need to be roped off each form a quarter circle, which together make a semicircle.

P = ½ circle + 4 radii

$$P = \frac{2\pi r}{2} + 4r$$

$$P = \pi r + 4r$$

$$P = \pi \times 25\ ft + 4(25\ ft)$$

$$P = 78.5\ ft + 100\ ft$$

$$P = 178.5\ ft$$

Step 2: Calculate the cost of the rope.

cost of rope = 178.5 ft × $0.72/ft
= $128.52

The cost of the rope is $128.52.