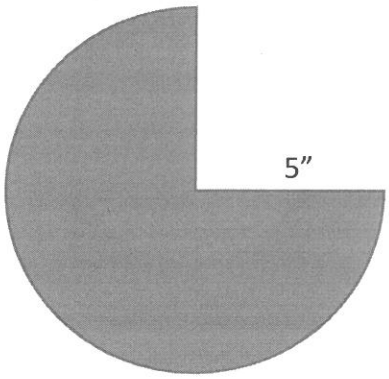
Example 3: Fraction of shape

Find the area of the following figure.



Area of figure $= \frac{3}{4} \times$ area of circle

$= \frac{3}{4} \times \pi r^2$

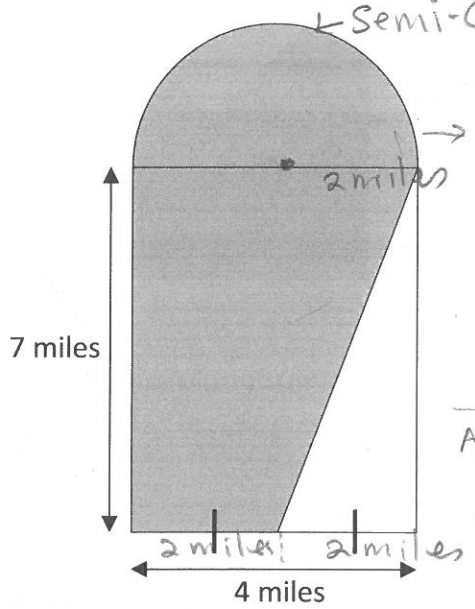
$= \left(\frac{3}{4}\right) \times \pi \times (5'')^2$

$= \left(\frac{3}{4}\right) \times (78'')^2$

$= 58.9 \text{ inches}^2$

Example 4: Putting It All Together

Find the shaded area of the following figure:



Area of semi-circle $= \frac{1}{2}$ Area of circle

$= \left(\frac{1}{2}\right) \pi \times (\text{radius})^2$

$= \frac{1}{2} \times \pi \times (2 \text{ miles})^2$

$= \frac{1}{2} \times \pi \times 4 \text{ miles}^2$

$= 6.28 \text{ miles}^2$

Area of Rectangle $= 7 \text{ miles} \times 4 \text{ miles}$

$= 28 \text{ miles}^2$

Area of Triangle $= \frac{1}{2} \times 2 \text{ miles} \times 7 \text{ miles}$

$= 7 \text{ miles}^2$

Shaded Area = (Area of rectangle + Area of semi-circle) − (Area of triangle)

$= 28 \text{ miles}^2 + 6.28 \text{ miles}^2 - 7 \text{ miles}^2$

$= 34.28 \text{ miles} - 7 \text{ miles}^2$

Area of shaded area $= 27.28 \text{ miles}^2$