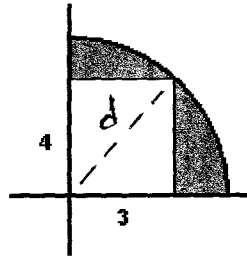


Math Worksheet: Geometry Problem (2)

1. A rectangle of length 4 and width 3 units has one vertex at the origin of a system of axes and another vertex on a quarter of a circle whose center is also at the origin. Find the shaded area.

The diagonal d of
the rectangle



is the radius of the quarter-circle.

$$d = \sqrt{4^2 + 3^2} = 5.$$

Shaded area = $\frac{1}{4}$ area of circle -
area of rectangle

$$= \frac{1}{4} (\pi 5^2) - 4 \times 3$$

$$= \frac{25\pi}{4} - 12 = \frac{25\pi - 48}{4} \text{ (unit}^2\text{)}.$$

$$\approx 7.6 \text{ (unit}^2\text{)}$$

2 significant figures