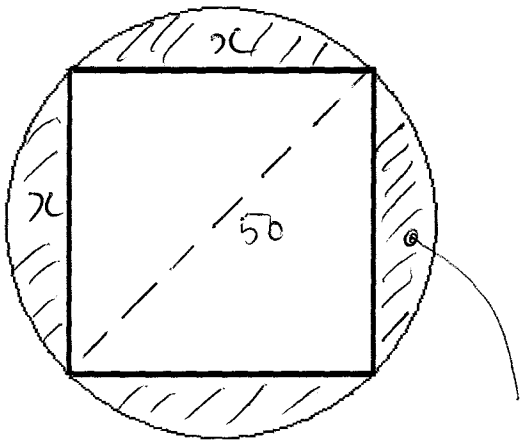
Geometry Worksheet: Area (5)

1. Calculate the shaded area inside the circle of perimeter 50π units.



diameter of circle $= \frac{\text{Perimeter}}{\pi} = 50$ units

diagonal of square = diameter of circle

hence: $x^2 + x^2 = 50^2$

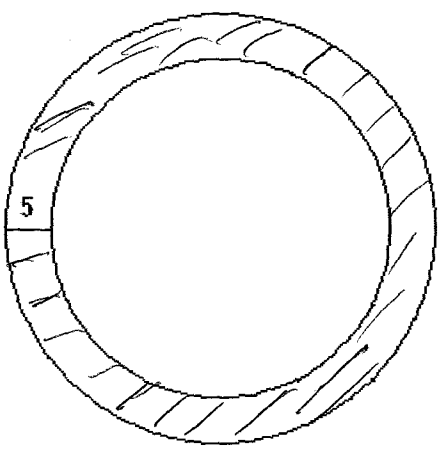
$\Rightarrow x = \sqrt{1250}$ units.

Shaded Area = Area of circle − Area of square

$= \pi\left(\frac{50}{2}\right)^2 - \left(\sqrt{1250}\right)^2 \cong \underline{713.5}\ (\text{unit}^2)$

one decimal place.

2. Calculate the shaded area of the ring, between the concentric circles, where width of the ring is 5 units and the diameter of the outer circle is 65 units.



diameter of inner circle

$= 65 - 5 - 5 = 55$ units

Area of ring = Area of outer circle − Area of inner circle

$= \pi\left(\frac{65}{2}\right)^2 - \pi\left(\frac{55}{2}\right)^2 \cong \underline{942.5}\ (\text{unit}^2)$