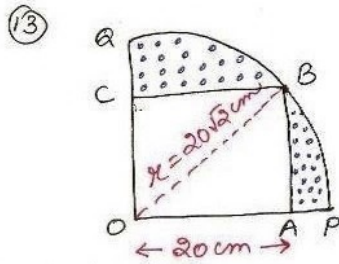


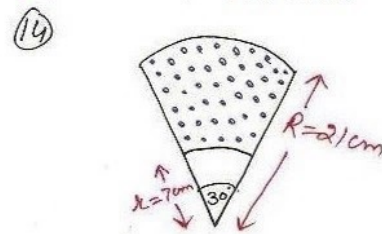
(i) area of quad. = $\frac{\pi r^2}{4}$
 $= \frac{\pi \times 2^2}{4} = 9.625 \text{ cm}^2$

(ii) reqd. area = area of quadrant - area of ΔBOD
 $= \frac{\pi r^2}{4} - \frac{1}{2} \times OB \times OD$
 $= \frac{11}{7 \times 4} \times 3.5 \times 3.5 - \frac{1}{2} \times 3.5 \times 2$
 $= 9.625 - 3.5$
 $= 6.125 \text{ cm}^2$

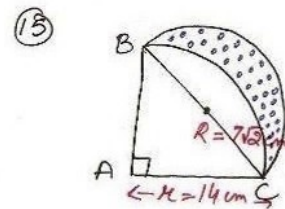


side of square = 20 cm
 diag. of square = $\sqrt{2}$ side
 $= 20\sqrt{2} \text{ cm}$
 \therefore radius of quadrant = $20\sqrt{3} \text{ cm}$

area of shaded region
 $=$ area of quadrant - area of square
 $= \frac{\pi r^2}{4} - \text{side}^2$
 $= \frac{3.14 \times (20\sqrt{2})^2}{4} - 20^2$
 $= \frac{1.57 \times 8.14 \times 400 \times 2}{4} - 400$
 $= 400(1.57 - 1)$
 $= 400 \times 0.57$
 $= 228 \text{ cm}^2$

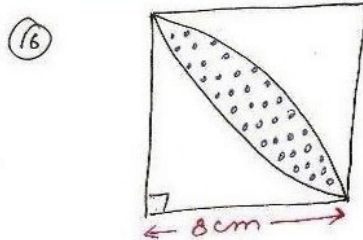


reqd. area = area of big sector - area of smaller sector
 $= \frac{\pi R^2 \theta}{360} - \frac{\pi r^2 \theta}{360}$
 $= \frac{\pi \theta}{360} (R^2 - r^2)$
 $= \frac{11}{7} \times \frac{30}{360} (21^2 - 7^2)$
 $= \frac{11}{42} \times (21-7)(21+7)$
 $= \frac{11}{42} \times 14 \times 28$
 $= \frac{308}{3}$
 $= 102.67 \text{ cm}^2$



$BC = 14\sqrt{2} \text{ cm}$
 $R = \frac{14\sqrt{2}}{2} = 7\sqrt{2} \text{ cm}$

area of shaded region
 $=$ area of ΔBAC + area of semi-circle - area of quadrant
 $= \frac{1}{2} \times AC \times AB + \frac{\pi R^2}{2} - \frac{\pi r^2}{4}$
 $= \frac{1}{2} \times 14 \times 14 + \frac{11}{7} \times \frac{(7\sqrt{2})^2}{2} - \frac{22 \times 14^2}{7 \times 4}$
 $= 98 + \frac{11}{7} \times 49 \times 2 - \frac{22 \times 196}{7 \times 4}$
 $= 98 + 154 - 154$
 $= 98 \text{ cm}^2$



required area
 $=$ area of 2 semi-circles - area of sq.
 $= 2 \times \frac{\pi r^2}{2} - \text{side}^2$
 $= \frac{11}{7} \times \frac{8 \times 8}{2} - 8^2$

$= 64 \left(\frac{11}{7} - 1 \right)$
 $= 64 \left(\frac{11-7}{7} \right)$
 $= 64 \times \frac{4}{7}$
 $= \frac{256}{7} \text{ cm}^2$
 $= 36.57 \text{ cm}^2$