

KS3 Higher Wk 11 answers

1, See handout

2, a, Area = $\pi \times r^2$

b, Circumference = πd or $2 \times \pi \times r$

3, 3.1416

4a, Area = $\pi \times 4^2$
= 50.3 cm^2

4b, Area = 2854.5 cm^2

4c, Area = $\pi \times 12^2$

= 452.4 cm^2

5a, Circumference = $\pi \times 8$
= 25.1 cm

5b, Cir = 56.5 cm

5c, Cir = $24\pi = 75.4 \text{ cm}$

4d, Area = 162.9 cm^2

4e, Area = 0.3 cm^2

4f, Area = 2463 cm^2

5d, Cir = 45.2 cm

5e, Cir = 1.9 cm

5f, Cir = 175.9 cm

6, Area = $\pi \times 2.1^2 = 13.9 \text{ m}^2$

7a, diameter = 10 cm

b, radius = 5 cm

c, Area of $\square = 10 \times 10 = 100 \text{ cm}^2$

a, Area of $\bigcirc = \pi \times 5^2 = 78.5 \text{ cm}^2$

e, Shaded area = $100 - 78.5$
= 21.5 cm^2

8, Area of Garden = $15 \times 6 = 90 \text{ m}^2$

Area of pond = $\pi \times 1.5^2 = 7.07 \text{ m}^2$

Area of Grass = $90 - 7.07 = 82.9 \text{ m}^2$

$82.9 \div 5 = 16.6$ boxes ie 17 boxes will be needed

9, a, radius = 10 cm

b, area = $\frac{\pi \times r^2}{2} = \frac{\pi \times 10^2}{2} = 157.1 \text{ cm}^2$

c, Perimeter = $\frac{1}{2}$ circumference + diameter
 $\frac{\pi \times d}{2}$ 20 cm



$\frac{\pi \times 20}{2}$ + 20

$31.4 + 20 = 51.4 \text{ cm}$

$$10, \text{ Perimeter} = 8 + \frac{\pi \times 8}{2} = 8 + 12.6 = 20.6 \text{ cm}$$

$$b, \text{ Perimeter} = \frac{1}{4} \text{ circumference} + 2 \times \text{radius} \\ \frac{2 \times \pi \times 3}{4} + 6 = 4.71 + 6 = 10.7 \text{ cm}$$

$$11, a, \text{ Area of outer circle} = \pi \times 11^2 = 380 \text{ cm}^2$$

$$b, \text{ Area of inner circle} = \pi \times 9^2 = 254.5 \text{ cm}^2$$

$$c, \text{ Area of shaded} = 380.1 - 254.5 = 125.6 \text{ cm}^2 \text{ or } 126 \text{ cm}^2 \text{ (3 sig fig)} \\ \text{(1 dp)}$$

$$12, a, \text{ Perimeter or Circumference} = \pi \times 40 \times 2 = 251 \text{ cm}$$

b, In one revolution wheel will cover 251 cm

$$c, \text{ In 20 revolutions wheel will travel } 251 \times 20 = 5020 \text{ cm} \\ \Rightarrow 50.2 \text{ m}$$