S2F/EB

THE CIRCLE

HOMEWORK ANSWERS

1. $C = \pi d$

$= 3.14 \times 15$ ✓

$= 47.1$ cm ✓

$\pi \times 15$

$= 47.123\ldots$

$= 47.12$ cm to 2 d.p.

35 ✓

2. $C = \pi d$ $\quad r = 12$, $d = 24$ ✓

$= 3.14 \times 24$ ✓

$= 75.36$ mm ✓

$\pi \times 24$

$= 75.3982\ldots$

$= 75.4$ mm to 3 s.f.

3. $C = \pi d$

$10.99 = 3.14 \times d$ ✓

$d = 10.99 \div 3.14$ ✓

$= 3.5$m ✓

$10.99 \div \pi$

$= 3.498\ldots$

$= 3.50$m to 3 s.f.

4. $C = \pi d$

$157 = 3.14 \times d$ ✓

$d = 157 \div 3.14$ ✓

$= 50$ cm ✓

$r = 25$ cm ✓

$157 \div \pi$

$= 49.974\ldots$

$r = 24.987\ldots$

$= 25$ cm to nearest cm.

5. $A = \pi r^2$

$= 3.14 \times 60 \times 60$ ✓

$= 11304 mm^2$ ✓

$\pi \times 60^2$

$= 11309.73\ldots$

$= 11300\ mm^2$ to 3 s.f.

6. $A = \pi r^2$ $\quad d = 14$, $r = 7$ ✓

$= 3.14 \times 7 \times 7$ ✓

$= 153.86 m^2$ ✓

$\pi \times 7^2$

$= 153.93\ldots$

$= 154 m^2$ to 3 s.f.

7. a) $C = \pi d$

$= 3.14 \times 6$ ✓ $\quad \pi \times 6$

$= 18.84 m$ ✓ $\quad = 18.849...$

$= 18.8m$ to 3 s.f.

b) $A = \pi r^2$

$= 3.14 \times 3 \times 3$ ✓ $\quad \pi \times 3^2$

$= 28.26 m^2$ ✓ $\quad = 28.274...$

$= 28.3 m^2$ to 3 s.f.

c) Area of square $= 8 \times 8$

$= 64 m^2$ ✓ $\quad 64 m^2$

Area of grass $= 64 - 28.26$ ✓ $\quad 64 - 28.3$

$= 35.74 m^2$ ✓ $\quad = 35.7 m^2$

b) 28.3×0.50 $\quad 35.7 \times 0.25$

$= £14.15$ $\quad = £8.93$ $\quad$ Total $£23.08$

8. a) $C = \pi d$

$= 3.14 \times 80$ ✓ $\quad \frac{1}{2} \times \pi \times 80$

$= 251.2 cm$ ✓ $\quad = 125.66...$

$= 126 cm$ to nearest cm

Semi-circle $\quad 251.2 \div 2 = 125.6 cm$ ✓

Perimeter $= 125.6 + 80 + 120 + 120$ ✓

$= 445.6 cm$ ✓ $\quad P = 446 cm.$

b) $A = \pi r^2$

$= 3.14 \times 40 \times 40$ ✓ $\quad \pi \times 40^2$

$= 5024 cm^2$ ✓ $\quad = 5026.54...$

$= 5027 cm^2$

Semi-circle $\quad 5024 \div 2 = 2512 cm^2 \quad 2513 cm^2$

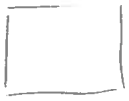
Area of window $= 2512 + (80 \times 120)$ ✓

$= 2512 + 9600$ ✓

$= 12112 cm^2$ ✓

Area $= 12113 cm^2$

9)



$4L = 100$

$L = 25.$

$A = 25^2$

$= 625 m^2$

Cost $= 625 \times 0.25$

$= €156.25$

$100 = \pi d$

$d = 31.8$

$r = 15.9 m$

$A = \pi r^2$

$= \pi \times 15.9^2$

$= 794.22...$

$= 794 m^2$

Cost 795×0.25

$= €198.75$

Total €355