Answers Sheet

Sector Area and Arc Length

1.

$= (145 / 360) \times \pi (6)^2$

$= 45.53 \text{ cm}^2$

2.

$= (130 / 360) \times 2\pi (20)$

$= 14.44 \pi \text{ cm}$

3.

$= (170 / 360) \times \pi (14.4)^2$

$= 308 \text{ cm}^2$

4.

$= (50 / 360) \times 2\pi (8)$

$= 2 \pi \text{ cm}$

5.

$= (198 / 360) \times \pi (12)^2$

$= 249 \text{ cm}^2$

6.

$= (80 / 360) \times 2\pi (4.2)$

$= 5.8 \text{ cm}$

Perimeter $= 4.2 + 4.2 + 5.8$

$= 14.2 \text{ cm}$

7.

Area of shaded region = $(1 / 4) \times \pi (8)^2$
$= 16 \pi$
Area of without shaded region = $(1 / 2) \pi (4)^2$
$= 8 \pi$
Shaded area = $16 \pi - 8 \pi$
$= 8 \pi \text{ cm}^2$

8.

Area of rectangle = 15×18
$= 270 \text{ cm}^2$
Area of semi-circle = $(1 / 2) \pi (7.5)^2$
$= 28.125 \pi \text{ cm}^2$
Shaded area = $270 - 28.125 \pi$
$= 181.68 \text{ cm}^2$
$= (181.68 / 180) \times 100$
$= 100.93\%$

9.

Arc length = $(x / 360) \times 2 \pi r$
$16 = (x / 360) \times 2 \pi (14)$
$5760 = x \times 28 \pi$
$x = 5760 / 28 \pi$
$x = 65.5^o$
Area = $(65.5 / 360) \times \pi (14)^2$
$= 111 \text{ cm}^2$

10.

$(x / 360) \times 2 \pi (10) = 8 \pi$
$(20x / 360) = 8$
$x = 144^o$
Area = $(144 / 360) \times \pi (10)^2$
$= 40 \pi \text{ cm}^2$
