1. The figure shows a semicircular flowerbed. Find the length of decorative edging needed to go all the way around the flowerbed.

\[
\text{Perimeter} = 4 + \frac{1}{2} \left(4\pi\right) \\
= 4 + 2\pi \\
\approx 4 + 6.28 \approx 10.28 \text{ m}
\]

2. Find the area and perimeter of this circle using \(\pi = \frac{22}{7}\).

\[
\text{Radius} = 14 \text{ cm} \\
C = \pi d = 28\pi \approx \frac{28 \cdot 22}{7} = \frac{28}{1} \cdot \frac{22}{7} = 88 \text{ cm} \\
A = \pi r^2 = \pi (14^2) = \frac{22}{7} \cdot 196 \cdot \frac{1}{1} = 616 \text{ cm}^2
\]

3. Find the area and circumference of this circle using \(\pi = 3.14\).

\[
\text{Radius} = 3 \text{ cm} \\
C = \pi d = 6\pi \approx 6(3.14) \approx 18.84 \text{ cm} \\
A = \pi (3^2) = 9\pi \approx 28.26 \text{ cm}^2
\]

4. Find the exact area and perimeter of this circle (give answer in terms of \(\pi\)).

\[
C = P = 116\pi \text{ m} \\
A = \pi r^2 = \pi (8^2) = 64\pi \text{ m}^2
\]

5. Find the area and perimeter of the shaded region using \(\pi = 3.14\).

\[
P = 10 + 10 + \frac{1}{4} (20\pi) \\
= 20 + 5\pi \\
= 20 + 5 \cdot 3.14 = 35.7 \text{ cm}
\]

\[
A = \frac{1}{4} (\pi r^2) = \frac{1}{4} (\pi \cdot 10^2) \\
\approx \frac{1}{4} (314) \\
\approx 78.5 \text{ cm}^2
\]
6. Find the area of the shaded region. Use $\pi = 3.14$.

$$4 \text{ quarter circles } = 1 \text{ full circle}$$

$$A = \pi r^2 = \pi (6^2) \quad \text{radius is } \frac{1}{2} (12)$$

$$= 36 \pi$$

$$\approx 113.04 \text{ cm}^2$$

7. Find the area and perimeter of the shaded region. Use $\pi = 3.14$.

$$4 \text{ quarter circles } = 1 \text{ full circle}$$

$$P = \text{ all of circum + } 3 + 3$$

$$= 16 \pi + 6$$

$$= 24.84 \text{ m}$$

$$A = \pi r^2 = \pi \cdot 3^2 = 9 \pi \approx 28.26 \text{ m}^2$$

8. Find the area and perimeter of this shaded region. Use $\pi = 3.14$.

$$\rightarrow \text{ Pythag: } \quad 20^2 + 10^2 = h^2$$

$$400 + 100 = h^2$$

$$500 = h^2$$

$$22.36 \approx h$$

Area = $\frac{1}{2} \text{ circle } + \text{ rect } + \text{ triangle}$

$$= \frac{1}{2} \pi (10^2) + 50(20) + \frac{1}{2} (20)(10)$$

$$= 157 + 1000 + 100$$

$$= 1257 \text{ m}^2$$

9. Find the area of the shaded region. Use $\pi = 3.14$.

Area large semi - Area Small semi

$$\frac{1}{2} (\pi (2^2)) - \frac{1}{2} (\pi (1^2))$$

$$2 \pi - \frac{1}{2} \pi$$

$$6.28 - 1.57 = 4.71 \text{ cm}^2$$
10. The figure shows a square and a semicircle. Find the area and perimeter of the shaded region.
Use \( \pi \approx 3.14 \)

\[
\text{Area} = \text{Square} - \text{Semicircle} = (8 \times 8) - \frac{1}{2}(\pi \cdot 4^2) = 64 - 25.12 \approx 38.88 \text{ cm}^2
\]

\[
\text{Perimeter} = 8 + 8 + \frac{1}{2} \text{Circumference} = 24 + \frac{1}{2}(8\pi) = 16 + 4\pi \approx 20.56 \text{ cm}
\]

11. Find the area of this shape. Use \( \pi = 3.14 \).

\[
\text{Area} = \pi r^2 = \pi (7^2) = 49\pi \approx 153.86 \text{ cm}^2
\]

12. This table mat is made up of a square and 4 semicircles. Find the area and the perimeter. Use \( \pi = \frac{22}{7} \)

\[
\text{Area} = (4 \times 14) + 2(\pi r^2) = 196 + 98\pi \approx 196 + 308 \approx 504 \text{ cm}^2
\]

\[
\text{Perimeter} = 2 \cdot \text{Circumference} = 2 \cdot (14\pi) = 28\pi \approx 88 \text{ cm}
\]

13. This figure is made up of a triangle and a semicircle. Find its area and perimeter. Use \( \pi = 3.14 \).

\[
\text{Area} = \text{Triangle} + \text{Semicircle} = \frac{1}{2}(6 \cdot 8) + \frac{1}{2}(\pi \cdot (5^2)) \approx 24 + 39.25 \approx 63.25 \text{ m}^2
\]

\[
\text{Perimeter} = 6 + 8 + \frac{1}{2} \text{Circumference} = 14 + \frac{1}{2}(16\pi) = 14 + 8\pi \approx 29.7 \text{ m}
\]
14. Find the area and perimeter of the shaded region. Leave answer in terms of $\pi$.

\[ \text{A of SemiCircle} = \frac{1}{2} \pi (2^2) = 2\pi \text{ cm}^2 \]

\[ P = \frac{1}{2} \text{Big Circle Circum} + \text{All small circle Circumf} \]
\[ = \frac{1}{2} \pi \text{ diam.} + 3 \pi \]
\[ = \pi + 3 \pi \]
\[ = 4\pi \text{ cm} \]

15. Find the area and perimeter of the shaded region. Leave answers in terms of $\pi$.

16. Find the area of the shaded region. Use $\pi = 3.14$