Perimeter (including circles and composite shapes) – SOLUTIONS

Name _____ **Date** _____

Model answers

Worked example Find the perimeter of a rectangle 5 cm by 3 cm.

Perimeter of rectangle = 2(length + width) = 2(5 + 3) = 2(8) = 16 cm

1. Find the perimeter of a square with side 4 cm.

Solution: 16 cm

2. Find the perimeter of a rectangle 6 cm by 2 cm.

Solution: 16 cm

3. A triangle has sides 5 cm, 7 cm, and 6 cm. Find the perimeter.

Solution: 18 cm

4. Find the perimeter of a regular hexagon with side 3 cm.

Solution: 18 cm

5. A pentagon has sides 2, 3, 4, 3, 2 cm. Find the perimeter.

Solution: 14 cm

6. Find the circumference of a circle with diameter 10 cm. ($C = \pi d$)

Solution: $10\pi \approx 31.4$ cm

7. Find the circumference of a circle with radius 5 cm. ($C = 2\pi r$)

Solution: $10\pi \approx 31.4$ cm

8. A semicircle has diameter 8 cm. Find its perimeter (straight edge + arc).

Solution: $8 + 4\pi \approx 20.6$ cm

9. A quarter circle has radius 6 cm. Find its perimeter (two radii + arc).

Solution: $12 + 3\pi \approx 21.4$ cm

10. A rectangle is 10 cm by 4 cm. Find the perimeter.

Solution: 28 cm

11. Find the circumference of a circle with diameter 14 cm.

Solution: $14\pi \approx 44.0$ cm

12. A regular octagon has side 2.5 cm. Find the perimeter.

Solution: 20 cm

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13. A shape consists of a rectangle 6 cm by 4 cm with a semicircle (width 6 cm) on one end. Find the total perimeter.

Solution: $16 + 3\pi \approx 25.4$ cm

14. A rectangular garden is 12 m long and 8 m wide. How much fencing is needed to enclose it?

Solution: 40 m

15. Find the circumference of a circle with radius 7 cm.

Solution: $14\pi \approx 44.0$ cm

16. A shape is formed from three sides of a rectangle (8 cm by 5 cm) and a semicircle (diameter 5 cm). Find the perimeter.

Solution: $21 + 2.5\pi \approx 28.9$ cm

17. Find the perimeter of a shape made from a square (4 cm side) with smaller squares removed from the corners.

Solution: 16 cm

18. A circle has circumference 30 cm. Find the diameter.

Solution: ≈ 9.5 cm

19. A running track is a rectangle 100 m by 50 m with semicircles on the ends (diameter 50 m). Find the total perimeter.

Solution: $250 + 50\pi \approx 407.1$ m

20. Two concentric circles have radii 8 cm and 5 cm. Find the difference in their circumferences.

Solution: $6\pi \approx 18.8$ cm

21. Find the perimeter of an equilateral triangle with side 9 cm.

Solution: 27 cm

22. A rectangle is 15 cm by 7 cm. Find the perimeter.

Solution: 44 cm

23. Find the circumference of a circle with diameter 20 cm.

Solution: $20\pi \approx 62.8$ cm

24. A semicircle has radius 6 cm. Find its perimeter.

Solution: $12 + 6\pi \approx 30.8$ cm

25. Find the perimeter of a trapezoid with parallel sides 5 cm and 8 cm, and non-parallel sides 4 cm each.

Solution: 21 cm

26. A composite shape has a rectangle (8 cm × 3 cm) with a quarter circle (radius 3 cm) attached. Find the perimeter.

Solution: $19 + 1.5\pi \approx 23.7$ cm

27. Find the circumference of a circle with radius 4 cm.

Solution: $8\pi \approx 25.1$ cm