Area and Perimeter of Quadrilaterals

Name: _____	Date: _____	Score: _____ / 30

Quick Review and Helpful Hints

Rectangle: area $= l \times w$, perimeter $= 2(l + w)$. **Square:** area $= s^2$, perimeter $= 4s$. **Parallelogram:** area $= b \times h$. Area is in square units; perimeter is the distance around.

▷ **Example:** A rectangle is 8 by 3. Find its area and perimeter.
Work: Area $= 8 \times 3 = 24$. Perimeter $= 2(8 + 3) = 2(11) = 22$.
★ **Answer:** $A = 24$, $P = 22$

$A = lw,\ P = 2(l + w).$

Practice Problems

Find each area or perimeter as directed.

1. Rectangle area, $l = 5, w = 4$ _____
2. Rectangle perimeter, $l = 5, w = 4$ _____
3. Square area, $s = 6$ _____
4. Square perimeter, $s = 6$ _____
5. Rectangle area, $l = 10, w = 2$ _____
6. Rectangle perimeter, $l = 10, w = 2$ _____
7. Square area, $s = 9$ _____
8. Parallelogram area, $b = 7, h = 4$ _____
9. Rectangle area, $l = 12, w = 5$ _____
10. Rectangle perimeter, $l = 12, w = 5$ _____
11. Square perimeter, $s = 10$ _____
12. Parallelogram area, $b = 6, h = 5$ _____
13. Square area, $s = 8$ _____
14. Rectangle perimeter, $l = 7, w = 3$ _____

Word Problems

15. A room is 12 ft by 10 ft. Find its area. _____
16. A square rug has side 5 ft. Find its perimeter. _____
17. A garden is 9 m by 4 m. Find its perimeter. _____
18. A parallelogram has base 8 and height 3. Find its area. _____

Illustrated Practice

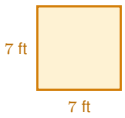
Use each picture. Decide whether area or perimeter is needed, then solve.

19. Find the area of the floor.

_____

25. Find the perimeter of the rectangle.

_____



20. A square table needs trim around the edge. Find the perimeter.

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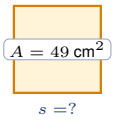
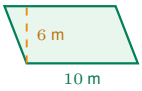


26. Find the side length of the square.

_____



21. Find the area of the parallelogram.

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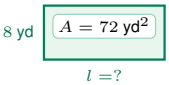
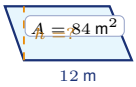


27. Find the missing length.

_____

22. A garden border goes around all sides. Find the perimeter.

_____



28. Find the missing height.

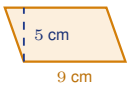
_____

23. Find the area of the square tile.

_____

29. A fence goes around the rectangle. Find the perimeter.

_____



24. Find the area of the banner.

_____

30. Find the area of the label.

_____

Answer Keys

1. 20	**11.** 40	**21.** 60 m^2
2. 18	**12.** 30	**22.** 30 m
3. 36	**13.** 64	**23.** 64 in^2
4. 24	**14.** 20	**24.** 45 cm^2
5. 20	**15.** 120 ft^2	**25.** 42 ft
6. 24	**16.** 20 ft	**26.** 7 cm
7. 81	**17.** 26 m	**27.** 9 yd
8. 28	**18.** 24	**28.** 7 m
9. 60	**19.** 126 ft^2	**29.** 56 ft
10. 34	**20.** 28 ft	**30.** 52 in^2

Step-by-Step Explanations

1. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $A = l \times w = 5 \times 4 = 20$. So the final answer is 20.

2. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $P = 2(5 + 4) = 2(9) = 18$. So the final answer is 18.

3. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $A = s^2 = 6^2 = 36$. So the final answer is 36.

4. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $P = 4s = 4(6) = 24$. So the final answer is 24.

5. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $A = 10 \times 2 = 20$. So the final answer is 20.

6. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $P = 2(10 + 2) = 2(12) = 24$. So the final answer is 24.

7. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $A = 9^2 = 81$. So the final answer is 81.

8. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $A = b \times h = 7 \times 4 = 28$. So the final answer is 28.

9. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $A = 12 \times 5 = 60$. So the final answer is 60.

10. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $P = 2(12 + 5) = 2(17) = 34$. So the final answer is 34.

11. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $P = 4(10) = 40$. So the final answer is 40.

12. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $A = 6 \times 5 = 30$. So the final answer is 30.

13. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $A = 8^2 = 64$. So the final answer is 64.

14. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $P = 2(7 + 3) = 2(10) = 20$. So the final answer is 20.

15. Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $A = 12 \times 10 = 120$ ft^2. So the final answer is 120 ft^2.

16. Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $P = 4(5) = 20$ ft. So the final answer is 20 ft.

17. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $P = 2(9 + 4) = 26$ m. So the final answer is 26 m.

18. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is $A = 8 \times 3 = 24$. So the final answer is 24.

19. For a rectangle, area means length times width. The floor is 14 ft by 9 ft, so $A = 14 \cdot 9 = 126$ ft^2.

20. Perimeter is the distance around the square. A square has four equal sides, so $P = 4(7) = 28$ ft.

21. For a parallelogram, use the base and the perpendicular height, not the slanted side. $A = bh = 10 \cdot 6 = 60$ m^2.

22. A rectangle has two lengths and two widths around the outside. $P = 2(11 + 4) = 2(15) = 30$ m.

23. The area of a square is side times side. With side 8 inches, $A = 8^2 = 64$ in^2.

24. The dashed height is perpendicular to the base, so it is the height used in the area formula. $A = 9 \cdot 5 = 45$ cm^2.

25. Use the rectangle perimeter formula: $P = 2(15 + 6) = 2(21) = 42$ ft.

26. The square area is 49 cm^2, so the side length is the number whose square is 49. Since $7^2 = 49$, the side is 7 cm.

27. For a rectangle, $A = lw$. The area is 72 and the width is 8, so $72 = 8l$ and $l = 9$ yd.

28. Use $A = bh$ and solve backward. Since $84 = 12h$, divide by 12 to get $h = 7$ m.

29. A fence goes around the outside, so use perimeter: $P = 2(18 + 10) = 2(28) = 56$ ft.

30. The label is a parallelogram, so multiply base by perpendicular height: $A = 13 \cdot 4 = 52$ in^2.

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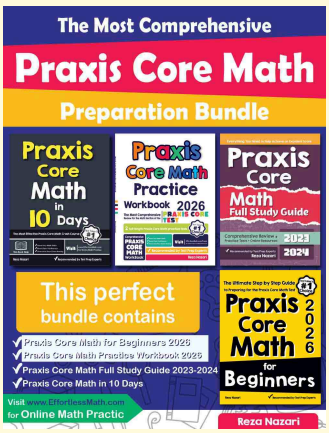

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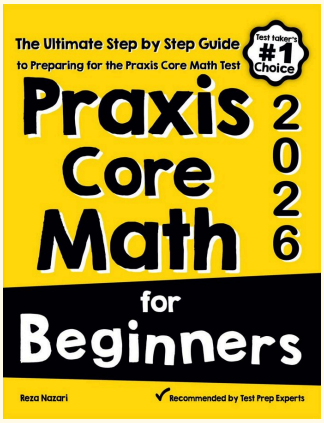

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