

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


**26.** Find the side length of the square. \_\_\_\_\_


**21.** Find the area of the parallelogram. \_\_\_\_\_


**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 <sup>2</sup>  |
| 2. 18  | 12. 30                  | 22. 30 m               |
| 3. 36  | 13. 64                  | 23. 64 in <sup>2</sup> |
| 4. 24  | 14. 20                  | 24. 45 cm <sup>2</sup> |
| 5. 20  | 15. 120 ft <sup>2</sup> | 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 <sup>2</sup> | 29. 56 ft              |
| 10. 34 | 20. 28 ft               | 30. 52 in <sup>2</sup> |

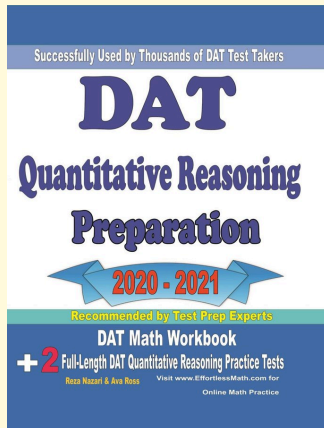
### Step-by-Step Explanations

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<sup>2</sup>. So the final answer is 120 ft<sup>2</sup>.
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<sup>2</sup>.
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<sup>2</sup>.
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<sup>2</sup>.
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<sup>2</sup>.
25. Use the rectangle perimeter formula:  $P = 2(15 + 6) = 2(21) = 42$  ft.
26. The square area is 49 cm<sup>2</sup>, 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<sup>2</sup>.



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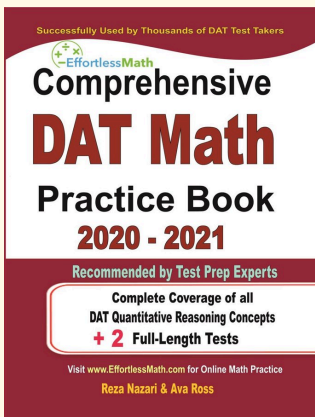


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