

# Area and Perimeter of Composite Figures

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_ / 30

### Quick Review and Helpful Hints

A *composite figure* is made of simpler shapes. Split it into rectangles and triangles, find each area, then *add* them – or *subtract* a cut-out piece. For perimeter, add the lengths of all the outside edges.

▷ **Example:** An L-shape is a  $6 \times 4$  rectangle with a  $2 \times 2$  square removed from a corner. Find its area. **Work:** Big rectangle =  $6 \times 4 = 24$ . Removed square =  $2 \times 2 = 4$ . Subtract:  $24 - 4 = 20$ . ★ **Answer:** 20



Split into rectangles, then add.

### ◆ Practice Problems

Find each total area.

- |   |  |
|---|--|
| <p>1. Rectangles <math>4 \times 3</math> and <math>2 \times 3</math> _____</p> <p>2. Rectangle <math>5 \times 4</math> plus square <math>2 \times 2</math> _____</p> <p>3. <math>6 \times 6</math> square minus <math>2 \times 2</math> _____</p> <p>4. Rectangle <math>8 \times 2</math> plus rectangle <math>3 \times 2</math> _____</p> <p>5. <math>10 \times 4</math> minus <math>4 \times 2</math> _____</p> <p>6. Squares <math>3 \times 3</math> and <math>5 \times 5</math> _____</p> <p>7. Rectangle <math>7 \times 3</math> plus triangle <math>b = 4, h = 3</math> _____</p> | <p>8. Square <math>5 \times 5</math> plus rectangle <math>5 \times 2</math> _____</p> <p>9. <math>12 \times 3</math> minus <math>2 \times 3</math> _____</p> <p>10. Rectangle <math>6 \times 5</math> plus <math>6 \times 1</math> _____</p> <p>11. Square <math>4 \times 4</math> plus triangle <math>b = 4, h = 2</math> _____</p> <p>12. <math>9 \times 4</math> minus <math>3 \times 4</math> _____</p> <p>13. Rectangle <math>10 \times 2</math> plus <math>4 \times 2</math> _____</p> <p>14. Rectangles <math>5 \times 2</math> and <math>5 \times 3</math> _____</p> |
|---|--|

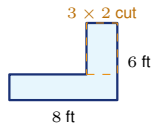
### ◆ Word Problems

15. A patio is an  $8 \times 5$  rectangle with a  $2 \times 2$  planter removed. Find the patio's area. \_\_\_\_\_
16. An L-shaped room is a  $6 \times 4$  rectangle plus a  $4 \times 3$  rectangle. Find its total area. \_\_\_\_\_
17. A figure is a  $10 \times 6$  rectangle minus a  $4 \times 3$  cut-out. Find its area. \_\_\_\_\_
18. A sign is a  $5 \times 4$  rectangle with a triangle ( $b = 5, h = 2$ ) on top. Find its total area. \_\_\_\_\_

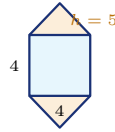


**◆ Illustrated Practice**

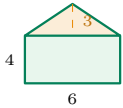
Split each picture into simple shapes. Add areas, or subtract cut-outs.



19. Find the patio area. \_\_\_\_\_



25. A logo has a square and two triangles. Find the total area. \_\_\_\_\_



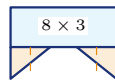
20. A sign has a rectangle and triangle. Find the total area. \_\_\_\_\_



26. Each stair layer is 2 units high. The layer widths are 9, 6, and 3. Find the area. \_\_\_\_\_



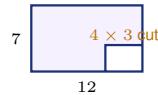
21. Find the frame area. \_\_\_\_\_



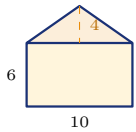
27. The rectangle is  $8 \times 3$ . Each triangular tail has  $b = 3$  and  $h = 2$ . Find the total area. \_\_\_\_\_



22. Use the dashed line to split the L-shape into two rectangles. Find the total area. \_\_\_\_\_



28. Find the area after the cut-out. \_\_\_\_\_



23. Find the house-front area. \_\_\_\_\_



29. Find the area of the T-shape. \_\_\_\_\_



24. Find the shaded area. \_\_\_\_\_



30. Add the two rectangles. Find the total area. \_\_\_\_\_



## Answer Keys

- |        |        |        |
|--------|--------|--------|
| 1. 18  | 11. 20 | 21. 64 |
| 2. 24  | 12. 24 | 22. 47 |
| 3. 32  | 13. 28 | 23. 80 |
| 4. 22  | 14. 25 | 24. 31 |
| 5. 32  | 15. 36 | 25. 36 |
| 6. 34  | 16. 36 | 26. 36 |
| 7. 27  | 17. 48 | 27. 30 |
| 8. 35  | 18. 25 | 28. 72 |
| 9. 30  | 19. 42 | 29. 44 |
| 10. 36 | 20. 33 | 30. 30 |

### Step-by-Step Explanations

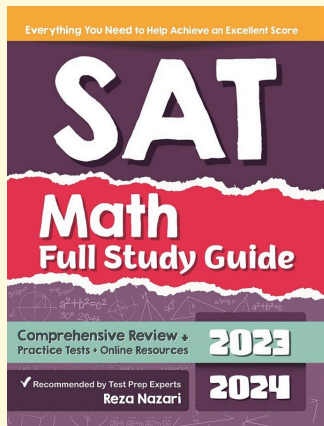
1. Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is  $4 \times 3 = 12$  and  $2 \times 3 = 6$ ; total  $12 + 6 = 18$ . So the final answer is 18.
2. A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is  $5 \times 4 = 20$  plus  $2 \times 2 = 4$ ; total 24. So the final answer is 24.
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  $36 - 4 = 32$ . So the final answer is 32.
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  $8 \times 2 = 16$  plus  $3 \times 2 = 6$ ; total 22. So the final answer is 22.
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  $40 - 8 = 32$ . So the final answer is 32.
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  $9 + 25 = 34$ . So the final answer is 34.
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 21 plus  $\frac{1}{2}(4)(3) = 6$ ; total 27. So the final answer is 27.
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 25 plus 10; total 35. So the final answer is 35.
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  $36 - 6 = 30$ . So the final answer is 30.
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 30 plus 6; total 36. So the final answer is 36.
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 16 plus  $\frac{1}{2}(4)(2) = 4$ ; total 20. So the final answer is 20.
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  $36 - 12 = 24$ . So the final answer is 24.
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 20 plus 8; total 28. So the final answer is 28.
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  $10 + 15 = 25$ . So the final answer is 25.
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  $8 \times 5 = 40$  minus 4; total 36. So the final answer is 36.
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  $24 + 12 = 36$ . So the final answer is 36.
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  $60 - 12 = 48$ . So the final answer is 48.
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 20 plus  $\frac{1}{2}(5)(2) = 5$ ; total 25. So the final answer is 25.
19. Think of the patio as a big  $8 \times 6$  rectangle with a  $3 \times 2$  corner removed. The area is  $48 - 6 = 42$ .
20. Find each part of the sign: the rectangle is  $6 \cdot 4 = 24$ , and the triangle is  $\frac{1}{2}(6)(3) = 9$ . Add them for 33.
21. A frame is an outer area minus an inner opening. The outside is  $12 \cdot 8 = 96$  and the opening is  $8 \cdot 4 = 32$ , so the frame area is 64.
22. Split the L-shape into two non-overlapping rectangles. Their areas are  $9 \cdot 3 = 27$  and  $4 \cdot 5 = 20$ , so the total is 47.
23. The house front has a rectangle and a triangle. The rectangle is  $10 \cdot 6 = 60$  and the triangle is  $\frac{1}{2}(10)(4) = 20$ , so the total is 80.
24. Start with the  $7 \times 5$  rectangle, then remove the  $2 \times 2$  missing corner.  $35 - 4 = 31$ .
25. The logo has a  $4 \times 4$  square and two matching triangles. The square is 16, and the triangles together are  $2(\frac{1}{2}(4)(5)) = 20$ , so the total is 36.
26. Add the three rectangular steps:  $9 \cdot 2 + 6 \cdot 2 + 3 \cdot 2 = 18 + 12 + 6 = 36$ .
27. The banner has a rectangle plus two triangles. The rectangle is  $8 \cdot 3 = 24$ , and the two triangles together add 6, so the total is 30.
28. Use subtraction for the cut-out: the whole rectangle is  $12 \cdot 7 = 84$ , and the missing piece is  $4 \cdot 3 = 12$ . The remaining area is 72.
29. The T-shape is made from two rectangles. Add  $10 \cdot 2 = 20$  and  $4 \cdot 6 = 24$  to get 44.
30. Add the two labeled rectangles:  $8 \cdot 3 = 24$  and  $3 \cdot 2 = 6$ . The total area is 30.



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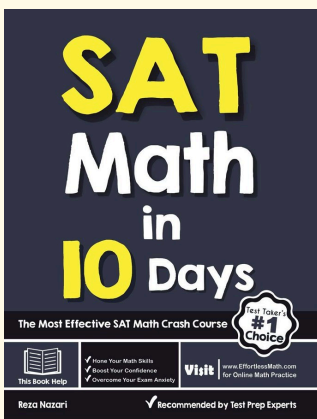
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