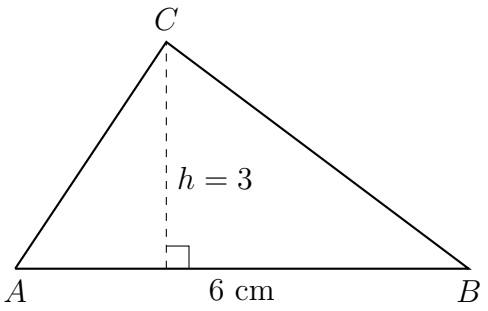
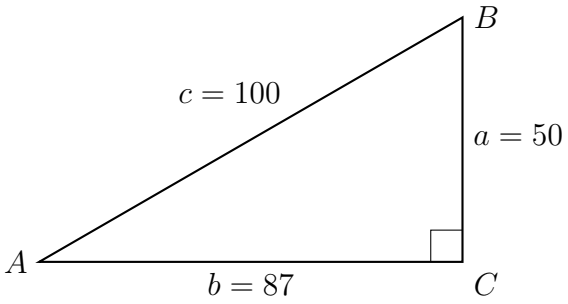
1.8 Classwork: Area of rectangles, triangles, parallelograms

1. Find the area of $\triangle ABC$, $Area = \frac{1}{2}bh$. The altitude h of the triangle is 3 centimeters and the base $AB = 6$ cm.



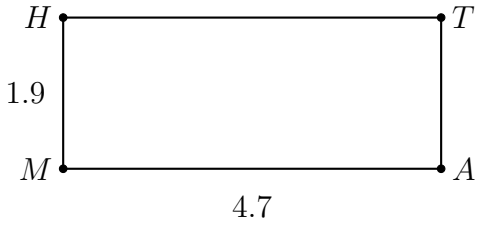
2. Find the area of $\triangle ABC$ shown below (not actual size) with $m\angle C = 90°$ and the lengths of the triangle's sides as $a = 50$, $b = 87$, and $c = 100$.



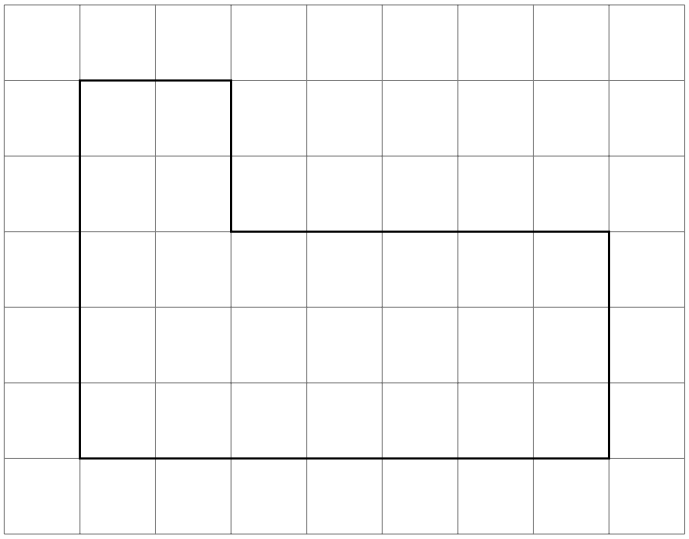
3. Draw and label a triangle $\triangle ABC$ with base $\overline{AB}$ 8 centimeters long and altitude of 5 centimeters. (show the altitude as a dotted line, and make sure it is perpendicular to the base)

4. Given the rectangle $ABCD$, shown below, with $AB = 11$ and $AD = 5$. Find its area.

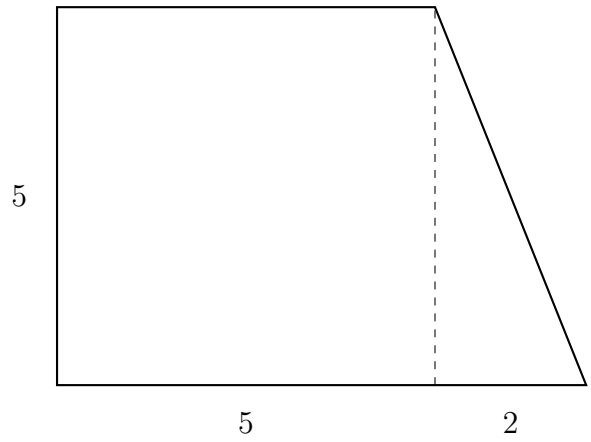
5. Find the area of the rectangle $MATH$ shown below, with $MA = 4.7$ and $MH = 1.9$.



6. Find the combined area of the shape shown below, a rectangle and a square. The grid is in centimeters.

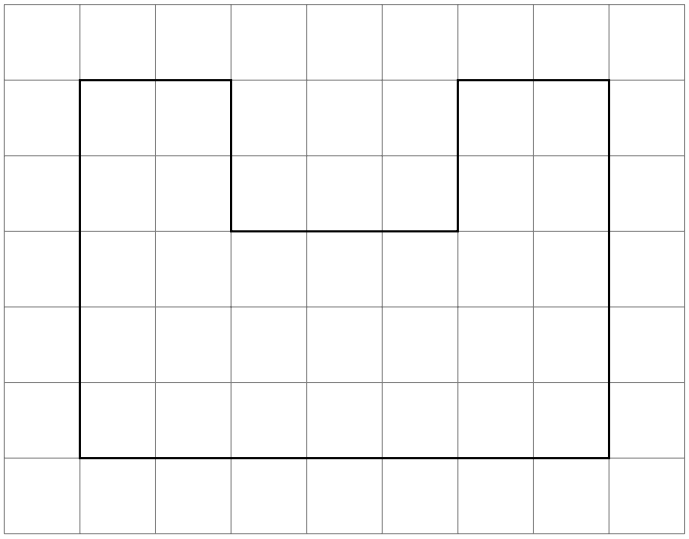


7. The compound shape shown below is composed of a square with side length 5 cm and a triangle with base 2 cm. Find the total area of the combined shape.



8. Repeat the calculation for the figure above using the trapezoid area formula.
9. Find the area A and perimeter P of a square with sides of length 10 centimeters.

10. Find the area A and perimeter P of the shape shown below. The grid is in centimeters.

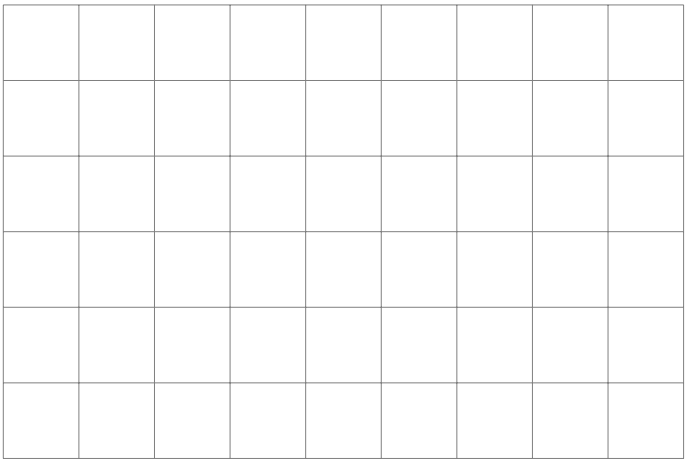


11. The area of a square is 100 square centimeters. Find the length of the side of the square.

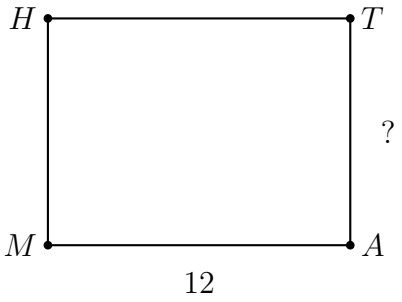
12. The perimeter of a square is 100 square centimeters. Find the length of the side of the square.

13. On the grid below, accurately draw and label two adjacent squares, one with a side length of 4 cm, the other with a side length of 3 cm. The grid is in centimeters.

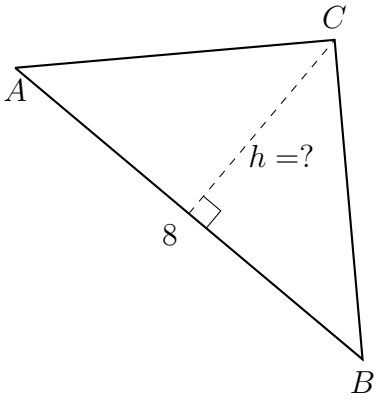
    Find the area A and perimeter P of combined shape.



14. The rectangle $MATH$ has an area of 102, with length $MA = 12$. Find the width of the rectangle AT.

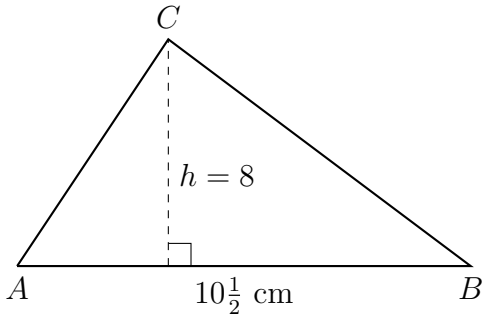


15. One side of the $\triangle ABC$ has a length $AB = 8$. The triangle's area is 44. Find the length of the altitude h of the triangle to vertex C and perpendicular to side $\overline{AB}$.

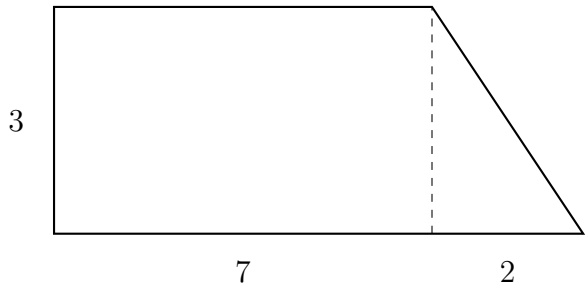


16. Find the area of $\triangle ABC$. The altitude h of the triangle is 8 centimeters and the base

$AB = 10\frac{1}{2}$ cm. (diagram not to scale)

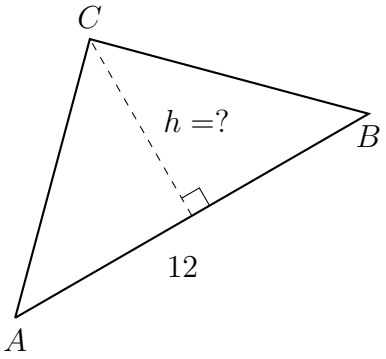


17. The compound shape shown below is composed of a rectangle 3 inches by 7 inches, and a triangle with base 2 inches. Find the total area of the combined shape.



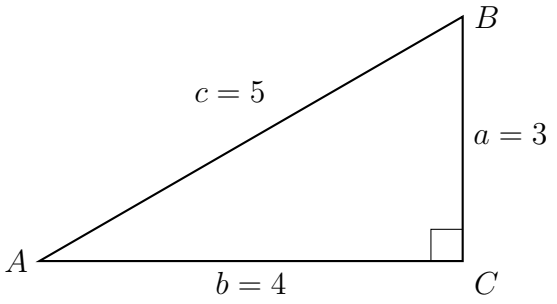
18. The area of a square is 36 square centimeters. Find the length of the side of the square.

19. One side of the $\triangle ABC$ has a length $AB = 12$. The triangle's area is 60. Find the length of the altitude h of the triangle to vertex C and perpendicular to side $\overline{AB}$.

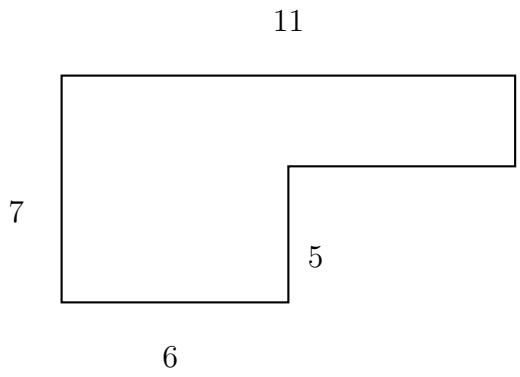


20. Find the area of $\triangle ABC$ shown below (not actual size) with $m\angle C = 90°$ and the lengths

of the triangle's sides as $a = 3$, $b = 4$, and $c = 5$.



21. Find the area and perimeter of the shape shown below. Mark the missing side lengths first. All angles are 90°. *(not drawn to scale)*



22. On the graph, draw polygon ABCDEF with vertices A(1, 1), B(1, 4), C(3, 4), D(3, 7), E(8, 7), and F(8, 1). Find the perimeter and the area of the polygon.

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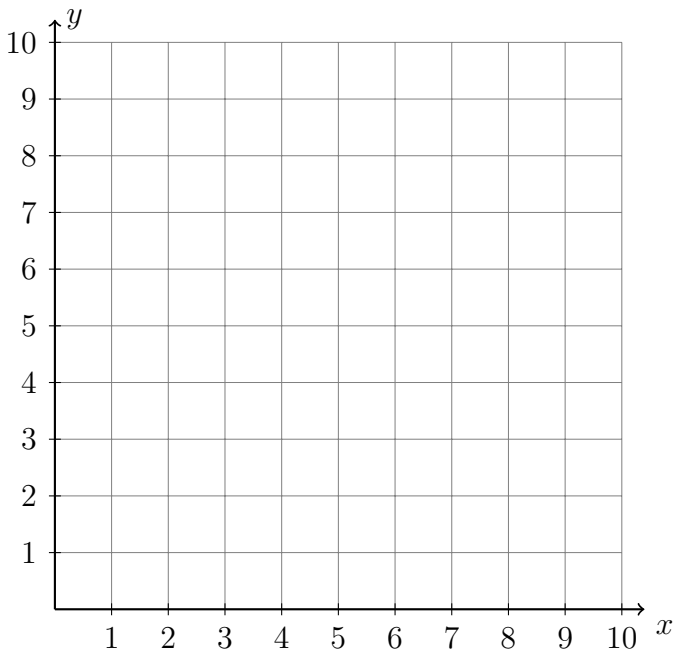

23. Find the *area* of the shape shown below composed of a rectangle and two semi-circular caps. Leave your answer as an exact value in terms of π.