

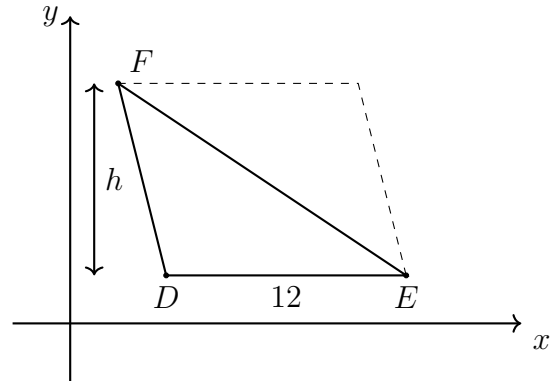
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1.9 Homework: Rounding and circle area

1. The $\triangle DEF$ has an area $A = 54$ and base $DE = 12$.

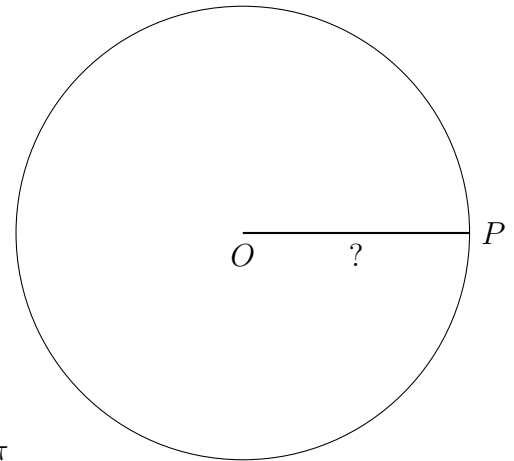
Find its height, starting with an equation.

$$A = \frac{1}{2}bh = 54$$



2. Given circle O with area $A = 49\pi$ square centimeters.

Find the radius of circle, OP . Start with the formula



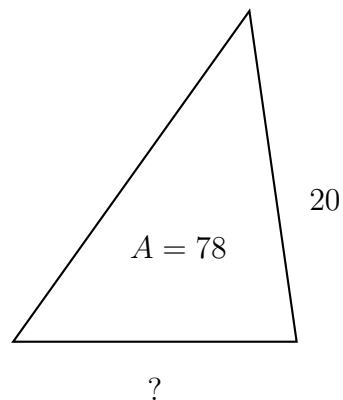
$$A = \pi r^2 = 49\pi$$

3. Mark each statement true or false.

- (a) T F 3.14 is the exact value of π
- (b) T F 4π is the area of a circle with radius 2 in terms of π
- (c) T F $C = 10\pi \approx 31.4$ is an approximation
- (d) T F $3\sqrt{2}$ is an exact value
- (e) T F 0.707 is an approximation to the *nearest thousandth* for $\frac{1}{\sqrt{2}}$
- (f) T F Rounding 10.498 to the nearest whole number should round up because since 9 is more than 5, first you round to 10.5, then that rounds up to 11.

4. Find the length of the base of a triangle with area $A = 78$ and height $h = 20$. Express your result as a decimal. Start with the form (use b or x):

$$A = \frac{1}{2} \times b \times h = 78$$

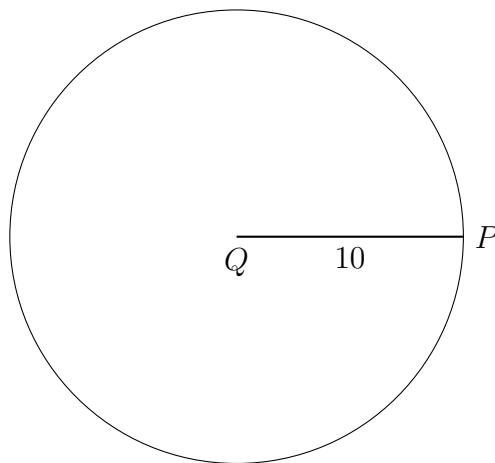


5. Find the area of the given circle Q with radius $r = 10$ centimeters.

Start with the formula

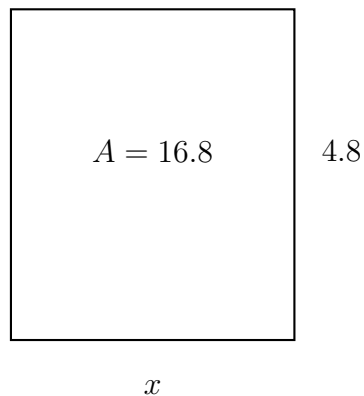
$$A = \pi r^2$$

- (a) State the area in terms of π



- (b) Now round to the nearest hundredth

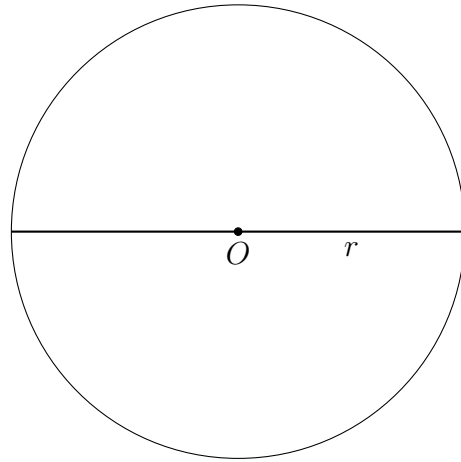
6. Find the base of a rectangle with area $A = 16.8$ and height $h = 4.8$, expressed as a decimal. First write an equation substituting the given values in the area formula.



7. Find the radius and circumference of circle O with diameter $D = 14$ centimeters.

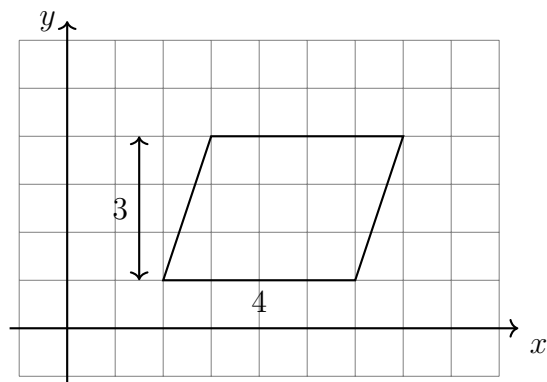
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- (a) Write down the radius.
- (b) State the circumference in terms of π
- (c) Express the circumference as a decimal, rounding to the nearest tenth.



8. A parallelogram is shown on the x - y plane having a base $b = 4$ and height $h = 3$.

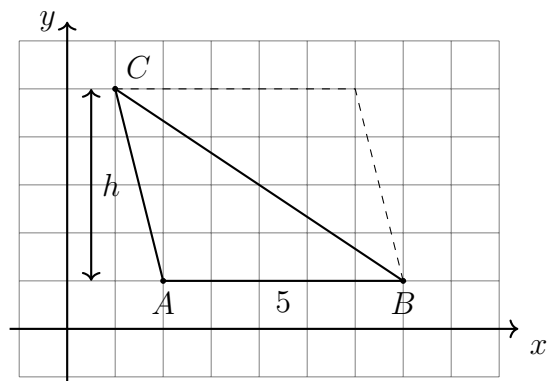
Find its area, showing the calculation.



9. The $\triangle ABC$ is shown below with $A(2, 1)$, $B(7, 1)$, and $C(1, 5)$. The length of the base of the triangle is $AB = 5$.

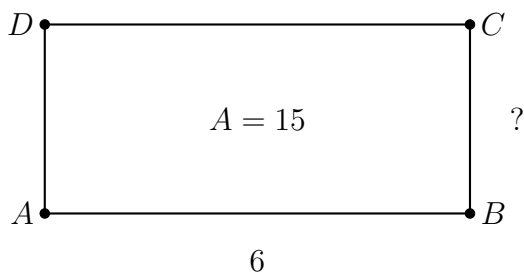
(a) Find the height h .

(b) Find its area, showing the calculation.



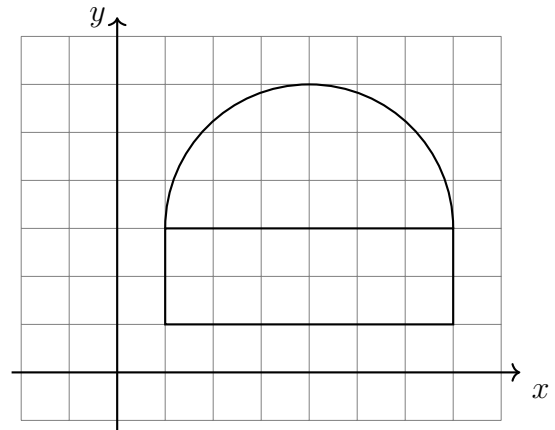
10. Rectangle $ABCD$ has area $A = 15$ and base $b = 6$ but unknown height. Write an equation then solve. Start with this form (for the unknown, use h , x , or BC) and state your answer as a fraction:

$$A = b \times h = 15$$

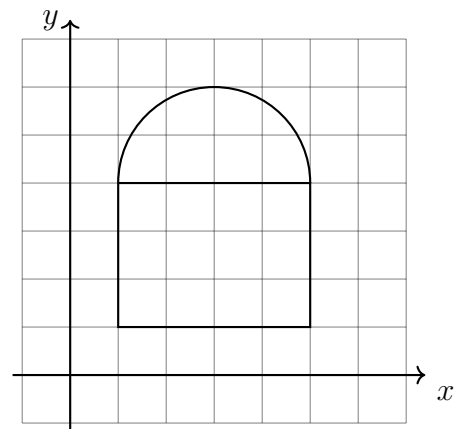


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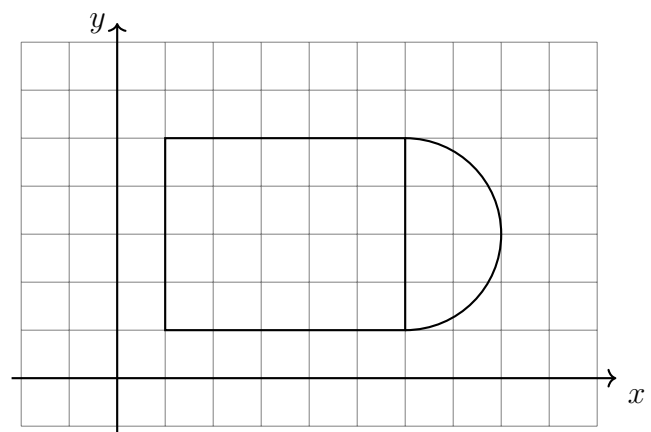
11. Find the area of the shape shown below composed of a rectangle and circular cap. Leave your answer as an exact value in terms of π .



12. Find the *perimeter* of the shape shown below composed of a rectangle and circular cap. Leave your answer as an exact value in terms of π .



13. Find the area of the shape shown below composed of a rectangle and a semi-circle.

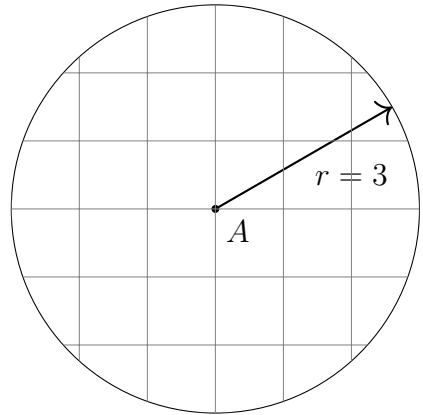


14. Given the circle A with radius $r = 3$. Leave exact answers, in terms of π .

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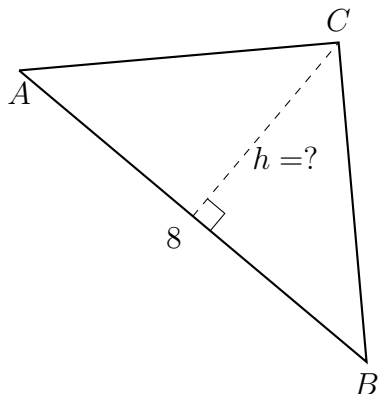
(a) Find the circumference of circle A .

(b) Find the area of the circle.

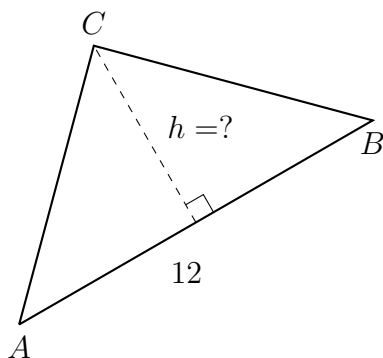


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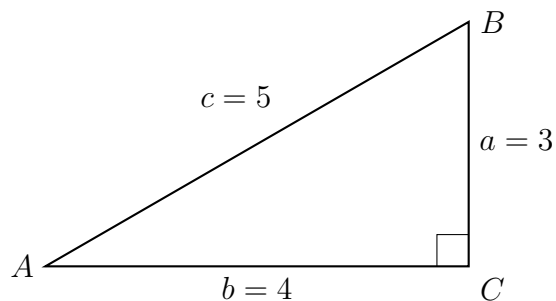
15. One side of the $\triangle ABC$ has a length $AB = 8$. The triangle's area is 44. Find the length of the altitude h of the triangle to vertex C and perpendicular to side \overline{AB} .



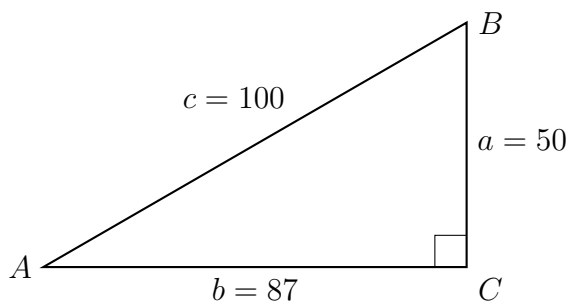
16. One side of the $\triangle ABC$ has a length $AB = 12$. The triangle's area is 60. Find the length of the altitude h of the triangle to vertex C and perpendicular to side \overline{AB} .



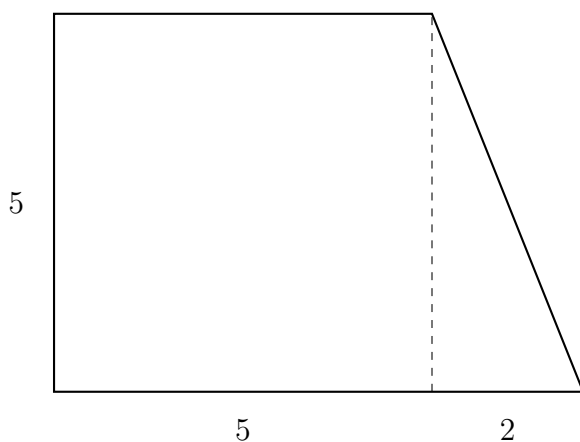
17. Find the area of $\triangle ABC$ shown below (not actual size) with $m\angle C = 90^\circ$ and the lengths of the triangle's sides as $a = 3$, $b = 4$, and $c = 5$.



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

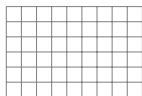


19. The compound shape shown below is composed of a square with side length 5 cm and a triangle with base 2 cm. Find the total area of the combined shape.



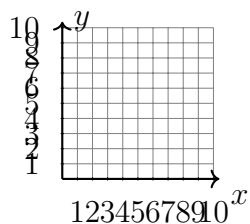
20. Repeat the calculation for the figure above using the trapezoid area formula.
21. On the grid below, accurately draw and label two adjacent squares, one with a side length of 4 cm, the other with a side length of 3 cm. The grid is in centimeters.

Find the area A and perimeter P of combined shape.



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. 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)