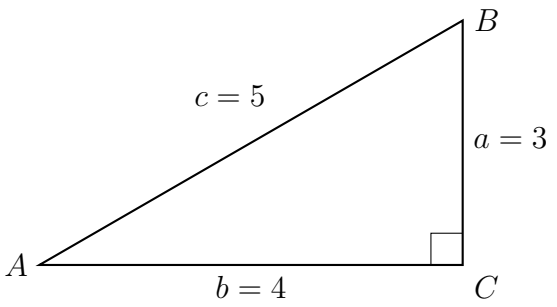
Name:

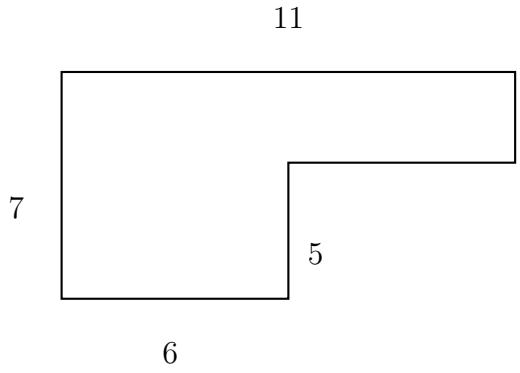
BECA / Dr. Huson / Geometry 02 Area and volume

2.9 Test: Area, Perimeter, and Volume

1. 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 $c = 5$.



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



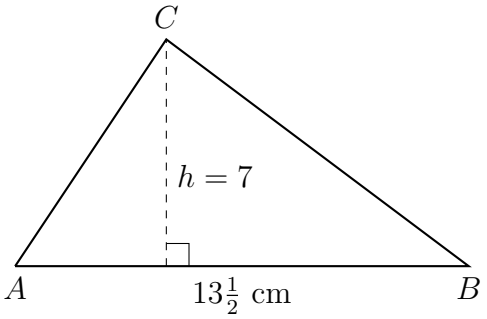
3. Find the area A and circumference C of a circle with radius 5 feet (in terms of π).

4. A waffle cone has a radius of 2 inches and height of 4 inches.

   (a) Write down the general formula for the volume of a cone.

   (b) Find the volume of the waffle cone.

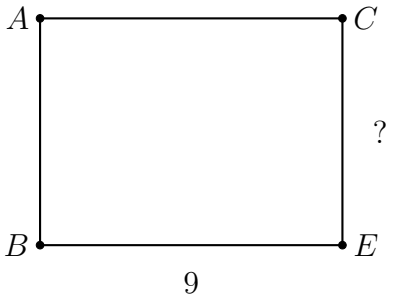
5. Find the area of $\triangle ABC$. The altitude h of the triangle is 7 centimeters and the base $AB = 13\frac{1}{2}$ cm. (diagram not to scale)



6. The rectangle $BECA$ has an area of 63, with length $BE = 9$.

   (a) Write an equation with the unknown w as the width of the rectangle.

   (b) Solve.



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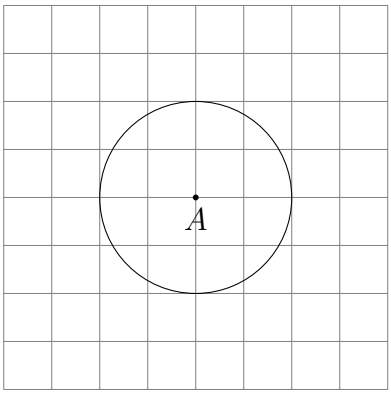
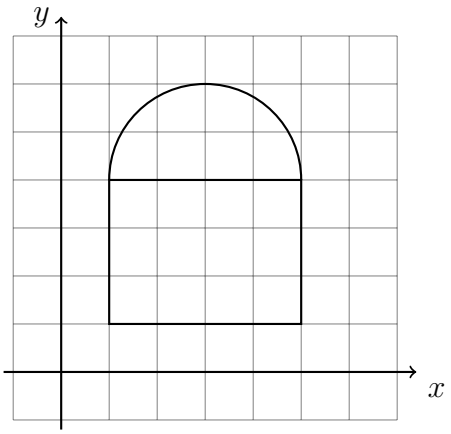
7. Given the circle centered at A with radius $r = 2$. Leave an exact answer, in terms of π if necessary.

   (a) Find the circumference of circle A.

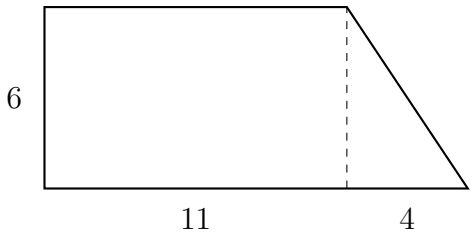
   (b) Find the area of the circle.



8. 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.



9. The compound shape shown below is composed of a rectangle 6 inches by 11 inches, and a triangle with base 4 inches. Find the total area of the combined shape.



10. A given sphere has a radius of 6 inches.

    (a) Write down the general formula for the volume of a sphere, using r to represent the radius.

    (b) Find the volume of the sphere, to the *nearest whole cubic inch*.

11. A triangle has an area of 68 square centimeters. Its height is 16 centimeters. Find the length of its base.

12. The perimeter of a square is 10 inches. Find its area.

13. A pyramid with a square base has a volume of 576 cubic inches. Its height is the same as the lengths of the sides of the base. Find the area of its base.