

Geometry 1

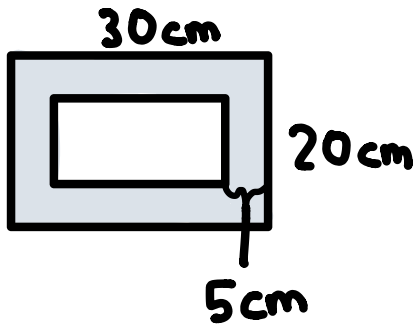
Lesson 4 Perimeter and Area

Rectangles:

$$\text{Area} = b(h)$$

$$\text{Perimeter} = 2b + 2h$$

Ex: (Moems Set 1 3D) A picture frame is 20 cm by 30 cm. This includes a border (the shaded region) 5cm wide surrounding the picture itself. What is the area of this shaded border in squared cm?



Ex: (Moems Set 2 2D) Rectangle ABCD is split into four smaller rectangles as shown. Each side of each rectangle is a whole number of centimeters. The areas of three of the small rectangles are shown. What is the area of rectangle ABCD, in square centimeters?

21cm^2	48cm^2
35cm^2	

Triangles:

$$\text{Area} = \frac{1}{2}bh$$

$$\text{Pythagorean Theorem: } a^2 + b^2 = c^2$$

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Cubes:

Volume: b^3

Surface Area: $6b^2$

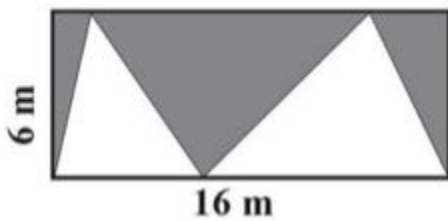
Rectangular Prisms:

Volume: bhw

Surface Area: $2bh + 2bw + 2hw$

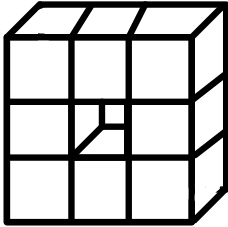
Guided Practice:

1. (Moems Set 11C) What is the area in square meters of the shaded part of the rectangle?



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2. (Moems Set 1 4D) Eight cubes are glued together to form the figure shown. The length of an edge of each cube is 3 centimeters. The entire figure is covered in paint. How many square centimeters are covered in paint.

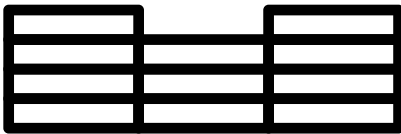


3. (Moems Set 2 3C) The floor of a rectangular room is completely covered with square tiles. The room is 9 tiles long and 5 tiles wide. Find the number of tiles that touch the walls or door of the room.

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4. (Moems Set 2 4D) A circle, a rectangle, and a triangle are drawn on the same sheet of paper. No side of the rectangle is also all or part of a side of the triangle. What is the greatest number of points of intersection?

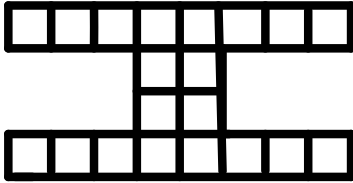
5. (Moems Set 3 1C) What is the total number of rectangles of all sizes that can be traced using the lines in this diagram?



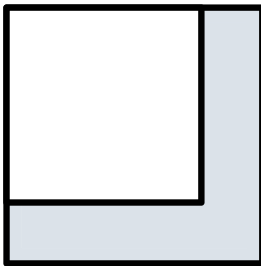
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Homework:

1. (Moems Set 1 2D) Each small region in the figure shown is a square. The area of the entire figure is 320 square cm. What is the number of cm in the perimeter of the entire figure?

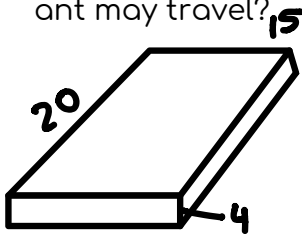


2. (Moems Set 4 1C) In the figure shown, two squares share corner A. The larger square has an area of 49 square cm. The smaller square has an area of 25 square cm. What is the perimeter of the shaded region, in cm?

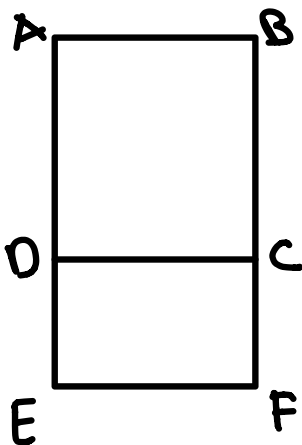


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3. (Moems Set 5 1E) The top of a rectangle box is 15 cm by 20 cm and its height is 4 cm. An ant begins at one corner of the box and walks along the edges. It touches all eight corners. What is the shortest distance, in cm, that the ant may travel?



4. (Moems Set 5 2D) The area of rectangle ABCD is 63 square centimeters. The area of rectangle DCFE is 35 square centimeter. In eac rectangle, the length of each side is a counting number of cm. Side AB is longer than side DE. How long is side AE, in cm?



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5. (Moems Set 2 1D) A rectangle has a perimeter of 2 meters and a length of 70 centimeters. Find the area of the rectangle in square centimeters.

