

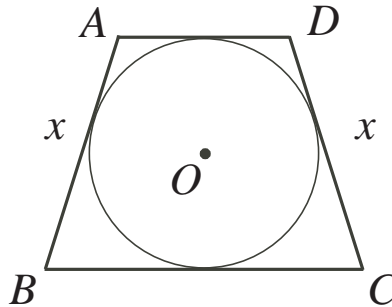


## Problem of the Week

### Grade 11 and 12

#### Trapped!

A four-sided figure with one pair of parallel sides is called a trapezoid. An isosceles trapezoid is one in which the non-parallel sides are equal in length.



Isosceles trapezoid  $ABCD$  has parallel sides  $AD$  and  $BC$  and sides  $AB = DC = x$ . The area of the trapezoid is  $510 \text{ cm}^2$ . A circle with centre  $O$  and radius  $10 \text{ cm}$  is contained inside the trapezoid so that it is tangent to each of the four sides of the trapezoid.

Determine the length of  $x$ .

For purposes of this problem accept the fact that a line drawn from the centre of a circle to a point of tangency is perpendicular to the tangent.

