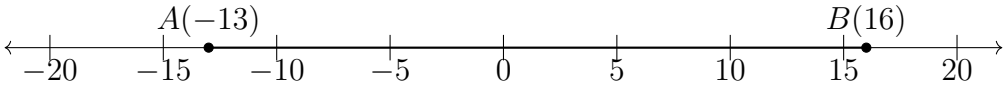
1.12 Test: Length and area

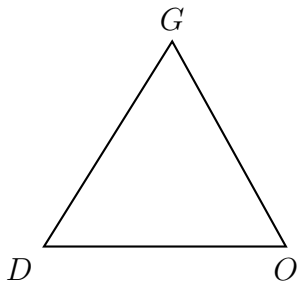
Show units if given. Show calculation as an equation, starting with a capitalized variable.

Line segments, length, number lines

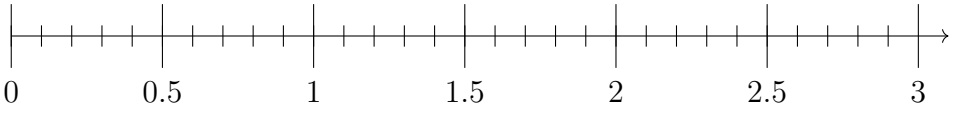
1. Points $A = -13$ and $B = 16$ are shown below. Find the length of segment $\overline{AB}$.



2. Isosceles $\triangle DOG$ has congruent sides $\overline{DO} \cong \overline{DG}$. Mark the congruencies with tick marks on the diagram.



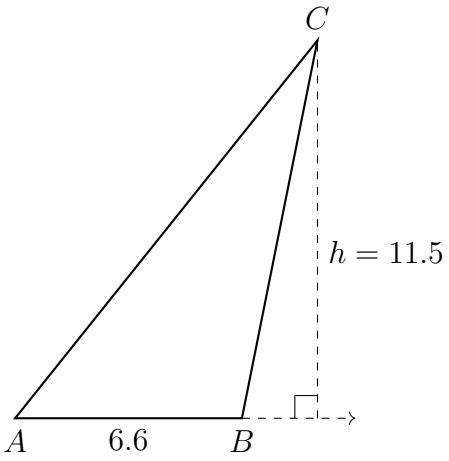
3. Mark and label irrational number $\sqrt{2} = 1.41421356...$ on the number line below.



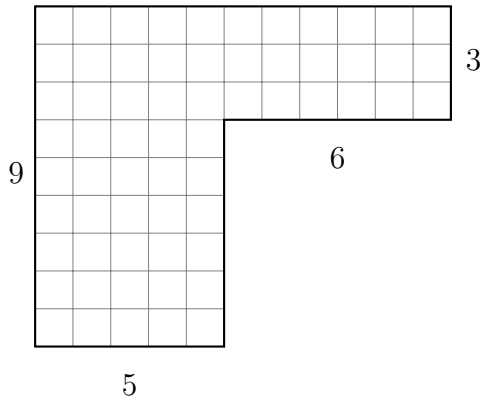
Perimeter and area

4. Measure and mark the lengths of the sides of the rectangle in centimeters. Find its area.

5. Find the area of the triangle ABC. The $\triangle$'s height is $h = 11.5$ and its base measures $AB = 6.6$.



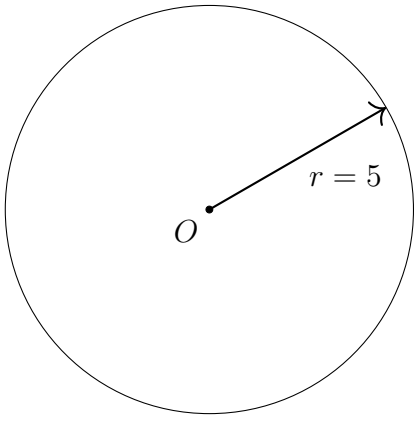
6. Find the area of the compound rectangular shape. Show the calculation as the sum of two rectangles.



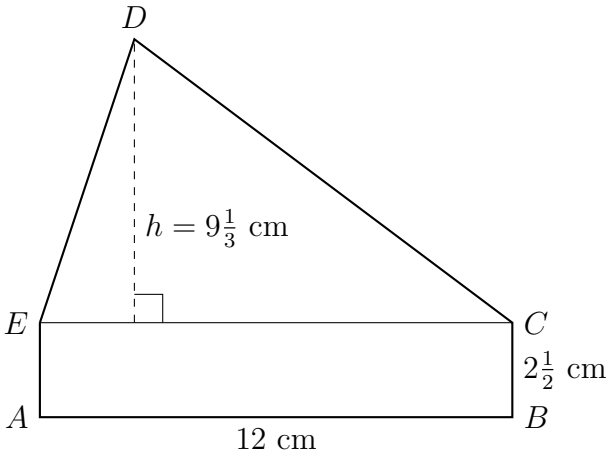
7. Given the circle O with radius $r = 5$. Leave exact answers, in terms of π.

   (a) Find the circumference of circle A.

   (b) Find the area of the circle.



8. A triangle with 12 centimeter base and $9\frac{1}{3}$ cm height lies on top of a rectangle with the same base $AB = 12$ cm and a width of $2\frac{1}{2}$ cm. Find the area of the combined figure.



Precision, percent error

9. Round each value to the *nearest thousandth*.

   (a) 2π (b) $\sqrt{3}$

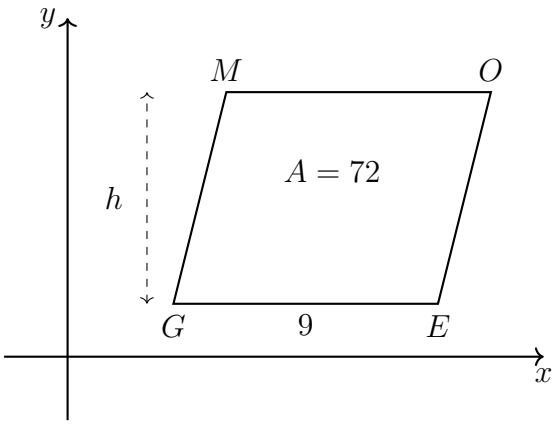
10. Find the height in meters of a person 61 inches tall. Round to the *nearest hundredth of a meter* (i.e. nearest centimeter). 1 meter equals 39.37 inches.

11. A palindrome is a word, phrase, or number that reads the same backwards and forwards. (e.g. "level", "racecar"). Find the % error in this palindromic approximation of pi.

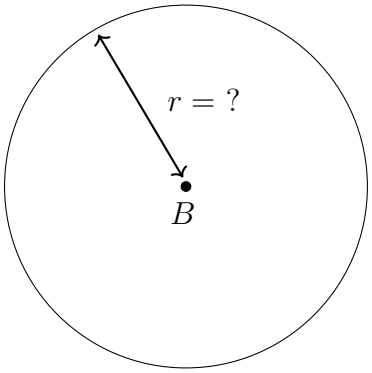
$$\pi \approx \frac{666}{212}$$

Modeling situations and solving with algebra

12. The parallelogram $GEOM$ has an area $A = 72$ and base $GE = 9$. Find its height h.



13. The circle B has an area of $A = 36\pi$ square centimeters. Find the radius r.



Start with the formula

$A = \pi r^2 = 36\pi$

14. Given $\overline{PQR}$, with $PQ = 2x + 4$, $QR = x + 3$, and $PR = 22$. Find PQ. (show check)