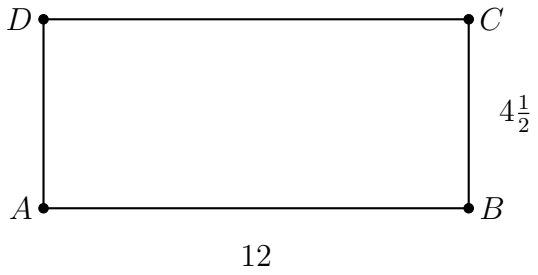
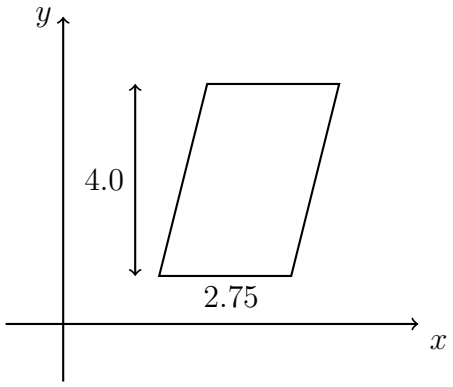
3.11 Quiz: area and volume situations

1. Find the area of rectangle $ABCD$ having length $l = 12$ and width $w = 4\frac{1}{2}$. Start with a formula of this form, substituting the given values:

   $A = l \times w$



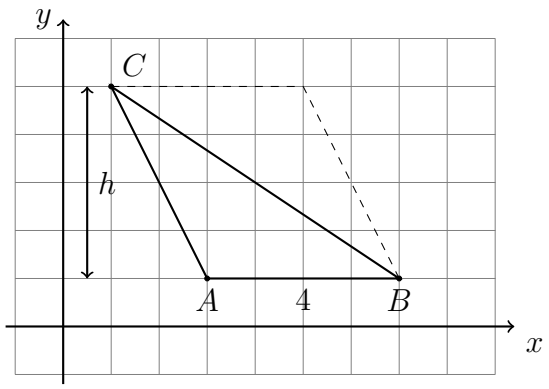
2. A parallelogram is shown on the x-y plane having a base $b = 2.75$ and height $h = 4.0$. Find its area, showing the calculation.



3. The $\triangle ABC$ is shown below with $A(3,1)$, $B(7,1)$, and $C(1,5)$. The length of the base of the triangle is $AB = 4$.

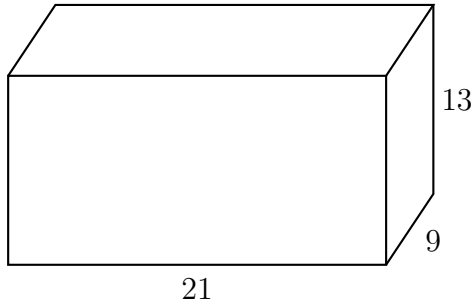
   (a) Find the height h.

   (b) Find the triangle's area, showing the calculation.



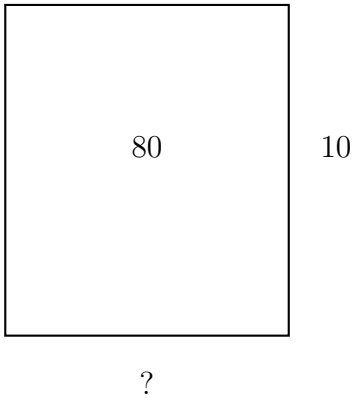
4. Find the volume of a rectangular prism (box). Its length is $l = 21$ inches, its height $h = 13$ inches, and depth is $w = 9$ inches. Start with the equation

   $V = l \times w \times h$



5. Find the length of the base of a rectangle with area $A = 80$ and height $h = 10$, expressed as a fraction. Start with the form (use b or x):

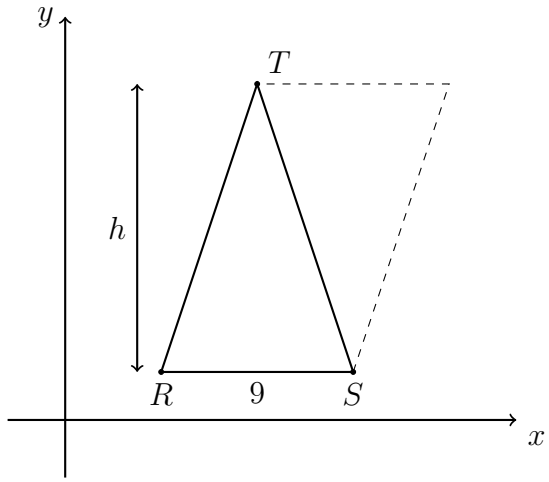
   $A = b \times h = 80$



6. Find the height of the $\triangle RST$, having an area of $A = 117$ and base $RS = 9$.

Start by substituting values in the area formula:

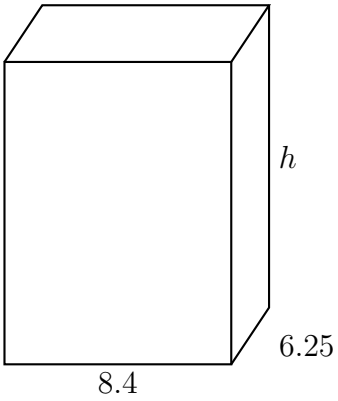
$$A = \frac{1}{2}bh = 117$$



7. The rectangular prism shown has a volume of $V = 735$ cubic feet. Its base measures $l = 8.4$ feet by $w = 6.25$ feet.

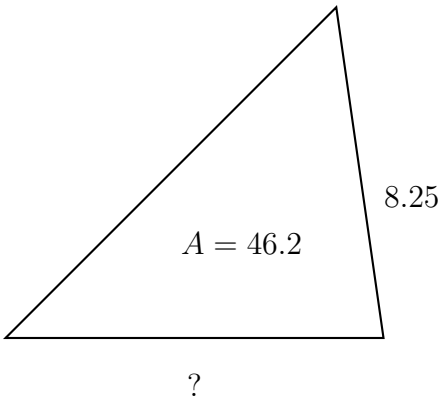
   Find its height. Begin by writing the following formula with values substituted:

   $V = l \times w \times h = 735$



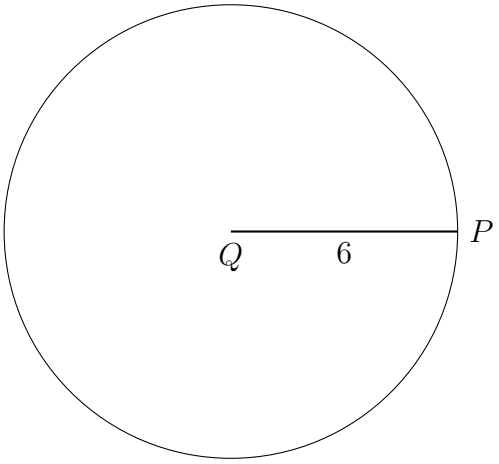
8. Find the length of the base of a triangle with area $A = 46.2$ and height $h = 8.25$. Express your result as a decimal. Start with the form (use b or x):

   $A = \frac{1}{2} \times b \times h = 46.2$



9. Find the area of circle Q with radius $r = 6$ centimeters, rounded to the *nearest tenth*. Start with the formula

   $A = \pi r^2$

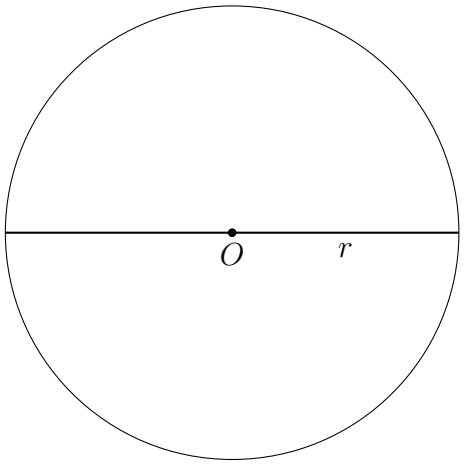


10. Find the radius and circumference of circle O with diameter $D = 15$ centimeters.

(a) Write down the radius.

(b) State the circumference in terms of π

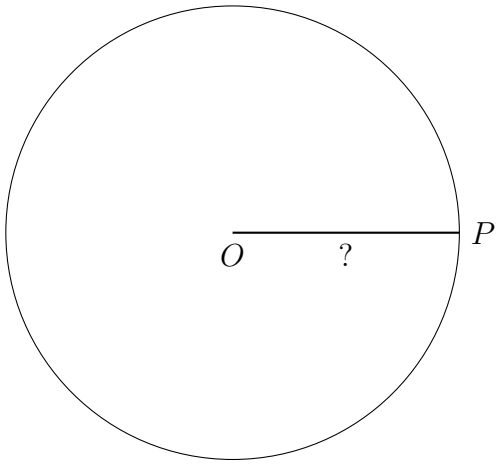
(c) Express the circumference as a decimal, rounding to the *nearest hundredth*.



11. Given circle O with area $A = 64\pi$ square centimeters.

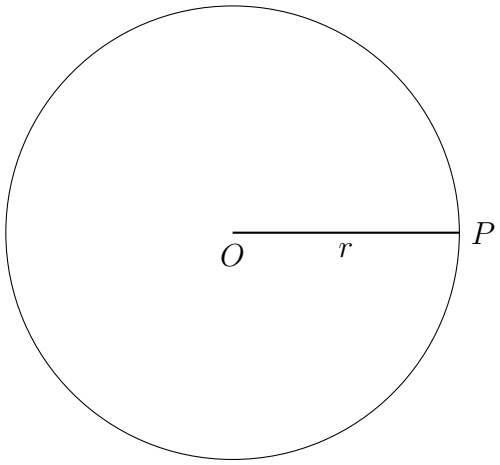
Find the radius of circle, OP. Start with the formula

$A = \pi r^2 = 64\pi$



12. Given circle O with circumference $C = 48\pi$ centimeters.

    Find the radius of circle, OP.

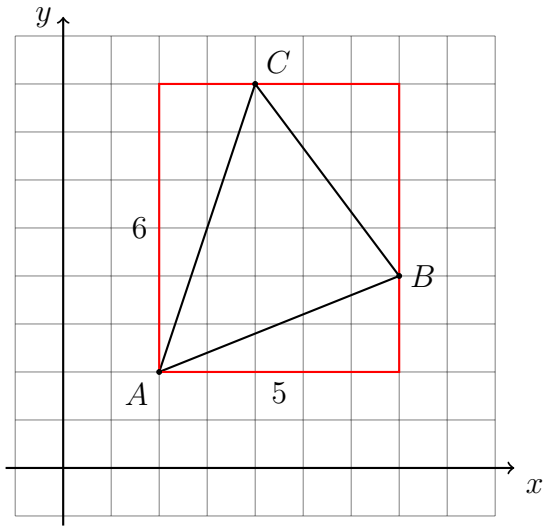


13. Spicy: Find the area of the $\triangle ABC$, shown below, with $A(2,2)$, $B(7,4)$, and $C(4,8)$.

(a) First find the area of the red rectangle with sides $b = 5$, $h = 6$.

(b) Find the area of the three triangles surrounding $\triangle ABC$ in the rectangle.

(c) Subtract their areas from the rectangle to find $A_{\triangle ABC}$



14. Spicy: A rectangular prism has a square base. Its volume is $V = 507$ cubic centimeters and its height is $h = 12$ cm.

    Calculate the dimensions of its base.