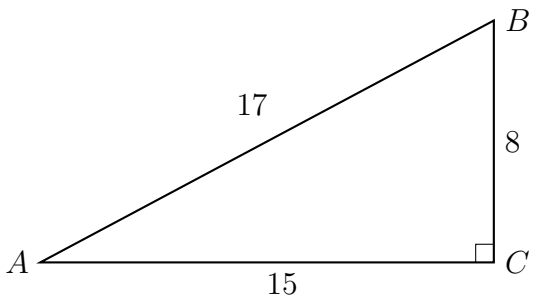
10.9 Do Now: Volume, density, trig review

1. $\triangle ABC$ is shown with $m\angle C = 90°$ and the lengths of the triangle's sides are $BC = 8$, $AC = 15$, and $AB = 17$.



For each item circle True or False.

(a) T F $\sin A = \frac{8}{15}$ (c) T F $\sin B = \frac{8}{17}$

(b) T F $\cos A = \frac{15}{17}$ (d) T F $\tan B = \frac{15}{8}$

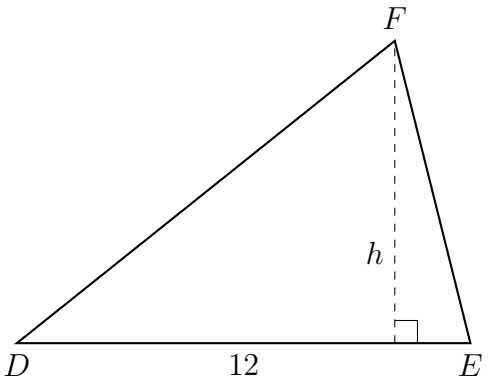
2. Express each trigonometric ratio to the nearest thousandth and each angle measure to the nearest degree.

(a) $\tan 23° =$ (c) $\sin^{-1} 0.5 =$

(b) $\cos 79° =$ (d) $\cos^{-1} 0.707 =$

3. In right triangle ABC, hypotenuse $\overline{AB}$ has a length of 26 cm, and side $\overline{BC}$ has a length of 17.6 cm. What is the measure of angle B, to the *nearest degree*?

4. The triangle DEF has base $DE = 12$ and an area $A_{\triangle DEF} = 48$. Find the altitude of the triangle, h.



5. The base of a pyramid is a rectangle with a width of 4.6 cm and a length of 9 cm. What is the height, in centimeters, of the pyramid if its volume is 82.8 cm^3?

6. Randy's basketball is in the shape of a sphere with a maximum circumference of 29.5 inches. Determine and state the volume of the basketball, to the *nearest cubic inch*.

10.9 Homework: Trig review, compound volumes & angle of elevation

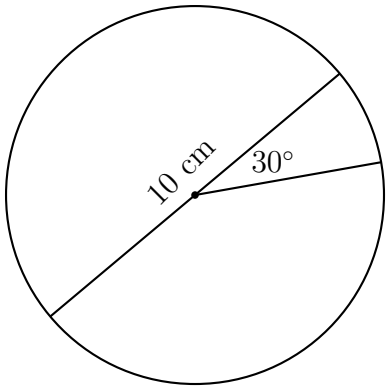
1. How many cubic inches are in the volume of a cube one foot on each side?

2. A child's tent can be modeled as a pyramid with a square base whose sides measure 60 inches and whose height measures 84 inches. What is the volume of the tent, to the *nearest cubic foot*?

3. Find the volume of a cylinder with radius $r = 3$ and height $h = 10$. Leave your answer in terms of π (not a decimal).

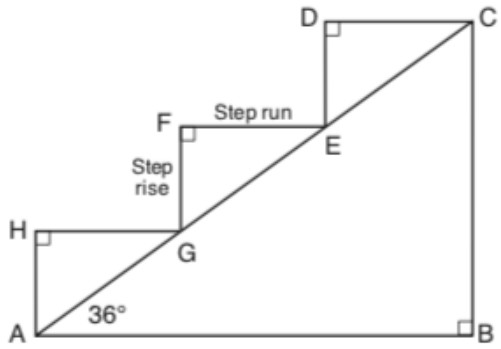
4. Find the weight of 60 liters of gasoline, given that the density of gasoline is 0.73 kilograms per liter.

5. A circle with a diameter of 10 cm and a central angle of 30° is drawn below.



What is the area, to the *nearest tenth of a square centimeter*, of the sector formed by the 30° angle?

6. A homeowner is building three steps leading to a deck, as modeled by the diagram below. All three step rises, $\overline{HA}$, $\overline{FG}$, and $\overline{DE}$, are congruent, and all three step runs, $\overline{HG}$, $\overline{FE}$, and $\overline{DC}$, are congruent. Each step rise is perpendicular to the step run it joins. The measure of $\angle CAB = 36°$ and $\angle CBA = 90°$.



If each step run is parallel to $\overline{AB}$ and has a length of 10 inches, determine and state the length of each step rise, to the *nearest tenth of an inch*.

Determine and state the length of $\overline{AC}$, to the *nearest inch*.