

(1) In each exercise below, the value of one of the trigonometric ratios is given. Find the value of all the other trigonometric ratios.

(a) $\text{sine} = \frac{3}{4}$.

(b) $\text{cosine} = \frac{2}{3}$.

(c) $\text{tangent} = \frac{3}{2}$.

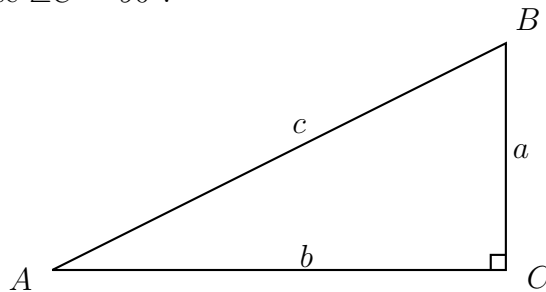
(d) $\text{secant} = \frac{5}{4}$.

(e) $\text{cosecant} = \frac{7}{6}$.

(f) $\text{cotangent} = \frac{8}{3}$.

“Solve each right triangle” means find the measures of all the interior angles and the lengths of all the sides of the right triangle.

(2) Solve each right triangle using the given information. Lengths refer to a triangle labeled as the one below. In each case $\angle C = 90^\circ$.



(a) $\angle A = 82^\circ, b = 72.35$.

(b) $\angle A = 43^\circ, c = 33.45$.

(c) $\angle A = 73^\circ, a = 123.51$.

(d) $\angle B = 56^\circ, b = 87.23$.

(e) $\angle B = 23^\circ, b = 153.25$.

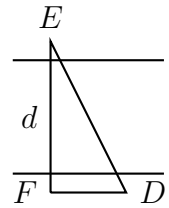
(f) $\angle B = 67^\circ, b = 48.93$.

(g) $a = 58.34, b = 73.94$

(h) $a = 23.15, c = 31.24$

(i) $b = 35.32, c = 43.12$

- (3) Find the distance d across a river if $e = 212$ ft. and $\angle D = 79^\circ$.



- (4) The angle of elevation of the top of a fir tree is 68° from an observation point 70 ft. from the base of the tree. Find the height of the tree.

- (5) The angle of elevation of the top of a tower is 30° from an observation point 120 ft. from the base of the tower. Find the height of the tower.

- (6) A 35 ft. pole casts a shadow 10 ft. long. Find the angle of elevation of the sun.

- (7) The angle of elevation of the top of mountain is 40° from an observation point 160 ft. from the base of the mountain. Find the height of the mountain.