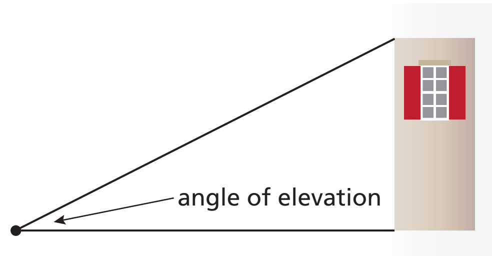
Vocabulary Flash Cards

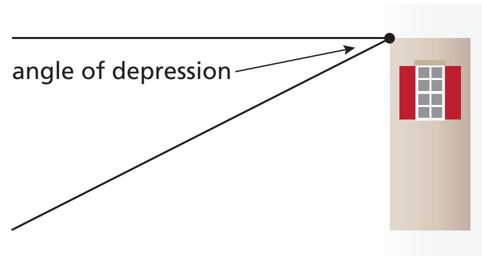
angle of depression *Chapter 9 (p. 497)*	**angle of elevation** *Chapter 9 (p. 490)*
cosine *Chapter 9 (p. 494)*	**geometric mean** *Chapter 9 (p. 480)*
inverse cosine *Chapter 9 (p. 502)*	**inverse sine** *Chapter 9 (p. 502)*
inverse tangent *Chapter 9 (p. 502)*	**Law of Cosines** *Chapter 9 (p. 511)*

Vocabulary Flash Cards

The angle that an upward line of sight makes with a horizontal line



The angle that a downward line of sight makes with a horizontal line

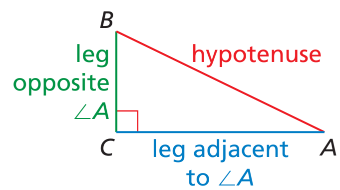


The positive number x that satisfies $\frac{a}{x} = \frac{x}{b}$

So, $x^2 = ab$ and $x = \sqrt{ab}$.

The geometric mean of 4 and 16 is $\sqrt{4 \bullet 16}$, or 8.

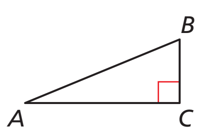
A trigonometric ratio for acute angles that involves the lengths of a leg and the hypotenuse of a right triangle



$$\cos A = \frac{\text{length of leg adjacent to } \angle A}{\text{length of hypotenuse}} = \frac{AC}{AB}$$

An inverse trigonometric ratio, abbreviated as $\sin^{-1}$

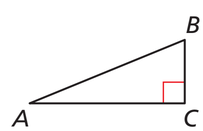
For acute angle A, if $\sin A = y$, then $\sin^{-1} y = m\angle A$.



$$\sin^{-1} \frac{BC}{AB} = m\angle A$$

An inverse trigonometric ratio, abbreviated as $\cos^{-1}$

For acute angle A, if $\cos A = z$, then $\cos^{-1} z = m\angle A$.



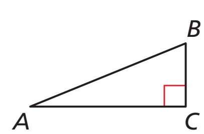
$$\cos^{-1} \frac{AC}{AB} = m\angle A$$

For $\triangle ABC$ with side lengths of a, b, and c,

$$a^2 = b^2 + c^2 - 2bc\cos A,$$
$$b^2 = a^2 + c^2 - 2ac\cos B, \text{ and}$$
$$c^2 = a^2 + b^2 - 2ab\cos C.$$

An inverse trigonometric ratio, abbreviated as $\tan^{-1}$

For acute angle A, if $\tan A = x$, then $\tan^{-1} x = m\angle A$.



$$\tan^{-1} \frac{BC}{AC} = m\angle A$$

Vocabulary Flash Cards

Law of Sines *Chapter 9 (p. 509)*	**Pythagorean triple** *Chapter 9 (p. 464)*
sine *Chapter 9 (p. 494)*	**solve a right triangle** *Chapter 9 (p. 503)*
standard position *Chapter 9 (p. 462)*	**tangent** *Chapter 9 (p. 488)*
trigonometric ratio *Chapter 9 (p. 488)*	

Vocabulary Flash Cards

A set of three positive integers a, b, and c that satisfy the equation $c^2 = a^2 + b^2$

Common Pythagorean triples:

3, 4, 5
5, 12, 13
8, 15, 17
7, 24, 25

For $\triangle ABC$ with side lengths of a, b, and c,

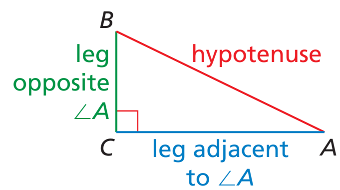
$$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c} \text{ and}$$
$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}.$$

To find all unknown side lengths and angle measures of a right triangle

You can solve a right triangle when you know either of the following.

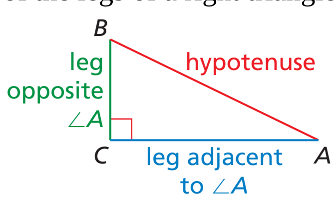
- two side lengths
- one side length and the measure of one acute angle

A trigonometric ratio for acute angles that involves the lengths of a leg and the hypotenuse of a right triangle



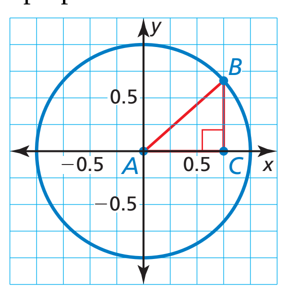
$$\sin A = \frac{\text{length of leg opposite } \angle A}{\text{length of hypotenuse}} = \frac{BC}{AB}$$

A trigonometric ratio for acute angles that involves the lengths of the legs of a right triangle



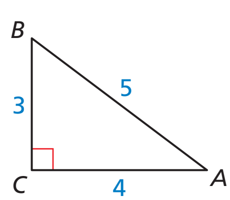
$$\tan A = \frac{\text{length of leg opposite } \angle A}{\text{length of leg adjacent to } \angle A} = \frac{BC}{AC}$$

A right triangle is in standard position when the hypotenuse is a radius of the circle of radius 1 with center at the origin, one leg lies on the x-axis, and the other leg is perpendicular to the x-axis.



A ratio of the lengths of two sides in a right triangle

Three common trigonometric ratios are sine, cosine, and tangent.



$$\tan A = \frac{BC}{AC} = \frac{3}{4}$$
$$\sin A = \frac{BC}{AB} = \frac{3}{5}$$
$$\cos A = \frac{AC}{AB} = \frac{4}{5}$$