Algebra 2
Unit: Trigonometric Functions
Section: Right Triangle Trigonometry

Example: Solving Right Triangles Using Trigonometric Ratios

Problem

Solve for the six trigonometric ratios of angle Z.

Solution

The right triangle has its right angle labeled Y and the two acute angles labeled X and Z. The hypotenuse is 17, side ZY is 8, and side XY is 15.

Sine of Z is defined as the opposite side to the angle Z divided by the hypotenuse which equals fifteen-seventeenths.

Cosine of Z is defined as the adjacent side to the angle Z divided by the hypotenuse which equals eight-seventeenths.

Tangent of Z is defined as the opposite side to the angle Z divided by adjacent side to angle Z which equals fifteen-eighths.

Cosecant of Z is defined as one divided by sine of Z which equals the hypotenuse divided by the opposite side to angle Z which equals seventeen-fifteenths.

Secant of Z is defined as one divided by cosine of Z which equals the hypotenuse divided by the adjacent side to angle Z which equals seventeen-eighths.

Cotangent of Z is defined as one divided by tangent of Z which equals the adjacent side to angle Z divided by the opposite side to angle Z which equals eight-fifteenths.