15 Problems in Solving Right Triangles (Part 3 of 4)
(Part 2)

ANSWERS

1.

$\sin(\theta) = \dfrac{x}{3}$	$\cos(\theta) = \dfrac{\sqrt{9-x^2}}{3}$	$\tan(\theta) = \dfrac{x}{\sqrt{9-x^2}}$
$\sec(\theta) = \dfrac{3}{\sqrt{9-x^2}}$	$\csc(\theta) = \dfrac{3}{x}$	$\cot(\theta) = \dfrac{\sqrt{9-x^2}}{x}$

2.

$\sin(\theta) = \dfrac{x}{1}$	$\cos(\theta) = \dfrac{\sqrt{1-x^2}}{1}$	$\tan(\theta) = \dfrac{x}{\sqrt{1-x^2}}$
$\sec(\theta) = \dfrac{1}{\sqrt{1-x^2}}$	$\csc(\theta) = \dfrac{1}{x}$	$\cot(\theta) = \dfrac{\sqrt{1-x^2}}{x}$

3.

$\sin(\theta) = \dfrac{2x}{1}$	$\cos(\theta) = \dfrac{\sqrt{1-4x^2}}{1}$	$\tan(\theta) = \dfrac{2x}{\sqrt{1-4x^2}}$
$\sec(\theta) = \dfrac{1}{\sqrt{1-4x^2}}$	$\csc(\theta) = \dfrac{1}{2x}$	$\cot(\theta) = \dfrac{\sqrt{1-4x^2}}{2x}$

4.

$\sin(\theta) = \dfrac{x}{\sqrt{3}}$	$\cos(\theta) = \dfrac{\sqrt{3-x^2}}{\sqrt{3}}$	$\tan(\theta) = \dfrac{x}{\sqrt{3-x^2}}$
$\sec(\theta) = \dfrac{\sqrt{3}}{\sqrt{3-x^2}}$	$\csc(\theta) = \dfrac{\sqrt{3}}{x}$	$\cot(\theta) = \dfrac{\sqrt{3-x^2}}{x}$

5.

$\sin(\theta) = \dfrac{x}{a}$	$\cos(\theta) = \dfrac{\sqrt{a^2-x^2}}{a}$	$\tan(\theta) = \dfrac{x}{\sqrt{a^2-x^2}}$
$\sec(\theta) = \dfrac{a}{\sqrt{a^2-x^2}}$	$\csc(\theta) = \dfrac{a}{x}$	$\cot(\theta) = \dfrac{\sqrt{a^2-x^2}}{x}$

6.

$\sin(\theta) = \dfrac{x}{\sqrt{x^2 + 16}}$	$\cos(\theta) = \dfrac{4}{\sqrt{x^2 + 16}}$	$\tan(\theta) = \dfrac{x}{4}$
$\sec(\theta) = \dfrac{\sqrt{x^2 + 16}}{4}$	$\csc(\theta) = \dfrac{\sqrt{x^2 + 16}}{x}$	$\cot(\theta) = \dfrac{4}{x}$

7.

$\sin(\theta) = \dfrac{x}{\sqrt{x^2 + 1}}$	$\cos(\theta) = \dfrac{1}{\sqrt{x^2 + 1}}$	$\tan(\theta) = \dfrac{x}{1}$
$\sec(\theta) = \dfrac{\sqrt{x^2 + 1}}{1}$	$\csc(\theta) = \dfrac{\sqrt{x^2 + 1}}{x}$	$\cot(\theta) = \dfrac{1}{x}$

8.

$\sin(\theta) = \dfrac{x}{\sqrt{x^2 + 15}}$	$\cos(\theta) = \dfrac{\sqrt{15}}{\sqrt{x^2 + 15}}$	$\tan(\theta) = \dfrac{x}{\sqrt{15}}$
$\sec(\theta) = \dfrac{\sqrt{x^2 + 15}}{\sqrt{15}}$	$\csc(\theta) = \dfrac{\sqrt{x^2 + 15}}{x}$	$\cot(\theta) = \dfrac{\sqrt{15}}{x}$

9.

$\sin(\theta) = \dfrac{2x}{\sqrt{4x^2 + 9}}$	$\cos(\theta) = \dfrac{3}{\sqrt{4x^2 + 9}}$	$\tan(\theta) = \dfrac{2x}{3}$
$\sec(\theta) = \dfrac{\sqrt{4x^2 + 9}}{3}$	$\csc(\theta) = \dfrac{\sqrt{4x^2 + 9}}{2x}$	$\cot(\theta) = \dfrac{3}{2x}$

10.

$\sin(\theta) = \dfrac{x}{\sqrt{x^2 + a^2}}$	$\cos(\theta) = \dfrac{a}{\sqrt{x^2 + a^2}}$	$\tan(\theta) = \dfrac{x}{a}$
$\sec(\theta) = \dfrac{\sqrt{x^2 + a^2}}{a}$	$\csc(\theta) = \dfrac{\sqrt{x^2 + a^2}}{x}$	$\cot(\theta) = \dfrac{a}{x}$

11.

$\sin(\theta) = \dfrac{\sqrt{x^2 - 25}}{x}$	$\cos(\theta) = \dfrac{5}{x}$	$\tan(\theta) = \dfrac{\sqrt{x^2 - 25}}{5}$
$\sec(\theta) = \dfrac{x}{5}$	$\csc(\theta) = \dfrac{x}{\sqrt{x^2 - 25}}$	$\cot(\theta) = \dfrac{5}{\sqrt{x^2 - 25}}$