Section 1.4
Using the Definition of Trigonometric Functions

TRIG FUNCTION DEFINITIONS

1. Complete the following incomplete tables of values for trigonometric function values.

$\sin\theta$	$\dfrac{2}{3}$
$\cos\theta$	
$\tan\theta$	$\dfrac{2}{\sqrt{5}}$
$\csc\theta$	
$\sec\theta$	
$\cot\theta$	

$\sin\theta$	1
$\cos\theta$	
$\tan\theta$	
$\csc\theta$	
$\sec\theta$	
$\cot\theta$	

$\sin\theta$	$\dfrac{1}{2}$
$\cos\theta$	
$\tan\theta$	
$\csc\theta$	
$\sec\theta$	$\dfrac{2}{\sqrt{3}}$
$\cot\theta$	

2. Complete the following incomplete tables of signs for trigonometric functions.

$\sin\theta$	$+$
$\cos\theta$	$-$
$\tan\theta$	
$\csc\theta$	
$\sec\theta$	
$\cot\theta$	

$\sin\theta$	$-$
$\cos\theta$	
$\tan\theta$	$-$
$\csc\theta$	
$\sec\theta$	
$\cot\theta$	

$\sin\theta$	
$\cos\theta$	
$\tan\theta$	
$\csc\theta$	$+$
$\sec\theta$	
$\cot\theta$	$-$

3. Given the following trigonometric values, determine which quadrant θ is in.

Value	Quadrant	Value	Quadrant	Value	Quadrant	Value	Quadrant
$\sin\theta > 0$		$\sin\theta < 0$		$\csc\theta < 0$		$\cot\theta < 0$	
$\cos\theta < 0$		$\tan\theta > 0$		$\sec\theta < 0$		$\cos\theta > 0$	

4. Fill in the table of all the trigonometric functions given a trigonometric value and a quadrant.

$$\sin\theta = \frac{2}{5} \text{ with } \theta \text{ in quadrant II}$$

$\sin\theta$	$\cos\theta$	$\tan\theta$	$\csc\theta$	$\sec\theta$	$\cot\theta$
$\frac{2}{5}$					

$$\sin\theta = \frac{2}{5} \text{ with } \theta \text{ in quadrant I}$$

$\sin\theta$	$\cos\theta$	$\tan\theta$	$\csc\theta$	$\sec\theta$	$\cot\theta$
$\frac{2}{5}$					

5. The following are True/False questions. Determine whether or not it is possible for the following trigonometric functions to obtain the given value. Provide justification for your answer.

(a) $\cos\theta = -28$

(b) $\cot\theta = -129$

(c) $\sec\theta = 0.5$