Name: **ANSWER KEY** No. _____ Per: _____ Date: _____
Serafino · Precalculus S1 M T W R F

2A

Trigonometry in the Coordinate Plane

Notes & Practice Packet

1. Fill in the chart below:

	WITHOUT A CALCULATOR				WITH A CALCULATOR			
Quadrant	III	**II**	**III**	IV	**IV**	**IV**	II	**III**
$0° \le \theta < 360°$	**225°**	**120°**	210°	**330°**	**334°**	**284°**	**102.9924°**	253.7°
Any coterminal	**−135°**	−240°	**570°**	**−390°**	**694°**	26,564°	**462.9924°**	**−106.3°**
$\hat{\theta}$	45°	**60°**	**30°**	**30°**	26°	**76°**	**77.0076°**	**73.7°**
sin Θ	**−√2/2**	**√3/2**	**$-\frac{1}{2}$**	−½	−0.4384	**−0.9703**	.9744	**−0.9598**
cos Θ	**−√2/2**	**$-\frac{1}{2}$**	**−√3/2**	**√3/2**	0.8988	**0.2419**	**−0.2248**	**−0.2807**

2. NAME THAT QUADRANT … or Quadrants… or Quadrantal Angles… or Special Angles

A. Sine is positive **I, II**

B. Secant is negative II, III

C. Cotangent is positive **I, III**

D. Cosecant is negative III, IV

E. Sine is positive & Secant is negative **II**

F. Cosecant is negative & Tangent is negative **IV**

G. Cosine is positive & Sine is negative **IV**

H. Tangent is positive & Secant is positive **I**

I. Cotangent is undefined **0°, 180°**

J. Secant is undefined **90°, 270°**

K. Cosine is −1 **180°**

L. Tangent is 0 **0°, 180°**

M. Sine is 0, Cosine is 1 **0°**

N. Cosecant is undefined & Secant is −1 **180°**

O. Cosecant is 1 **90°**

P. Secant is und & Cosecant is Negative **270°**

Q. Tangent is −1 **135°, 315°**

R. Cosine is − √3 /2 **150°; 210°**

S. Sine is ½ **30°, 150°**

3. For the given information, find the exact (no calc) AND approximate (calc) six trig ratios of Θ. Then find $0° \le \Theta < 360°$ If two possibilities exist, give both.

a. A point on the terminal side of θ is (–1, 3)

sin Θ = $\frac{3\sqrt{10}}{10}$ ≈ 0.9487 csc Θ = $\frac{\sqrt{10}}{3}$ ≈ 1.0541 Θ = 108.4349 °

cos Θ = $\frac{-\sqrt{10}}{10}$ ≈ –0.3162 sec Θ = $-\sqrt{10}$ ≈ –3.1623 Θ' = 71.5651 °

tan Θ = –3 cot Θ = –1/3

b. The cot θ = –1/2 in QIV

sin Θ = $\frac{-2\sqrt{5}}{5}$ ≈ – 0.8944 csc Θ = $-\frac{\sqrt{5}}{2}$ ≈ –1.1180 Θ = 296.5651 °

cos Θ = $\frac{\sqrt{5}}{5}$ ≈ –0.4472 sec Θ = $\sqrt{5}$ ≈ 2.2361 Θ' = 63.4349 °

tan Θ = –2 cot Θ = –1/2

c. The sec θ = 5/3 Θ' = 53.1301 °

Quadrant I Θ = 53.1301 °

sin Θ = 4/5 = 0.8
csc Θ = 5/4 = 1.25
cos Θ = 3/5 = 0.6
sec Θ = 5/3 = 1.6666
tan Θ = 4/3 = 1.3333
cot Θ = 3/4 = 0.75

Quadrant IV Θ = 306.8699 °

sin Θ = –4/5 = – 0.8
csc Θ = –5/4 = – 1.25
cos Θ = 3/5 = 0.6
sec Θ = 5/3 = 1.6666
tan Θ = –4/3 = – 1.3333
cot Θ = –3/4 = –0.75

d. The sin Θ = –5/3

Not possible! The a sine ratio can never be greater than 1 (… or less than negative 1)