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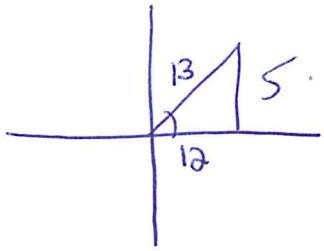
Date _____
Algebra II

Reciprocal Trig Ratios

Pythagorean Triple

1. If $\cos\vartheta = \frac{12}{13}$ (A / H) and ϑ is in Quadrant I, find:



a) $\cos\vartheta$ $\frac{12}{13}$

b) $\sin\vartheta$ $\frac{5}{13}$

c) $\tan\vartheta$ $\frac{5}{12}$

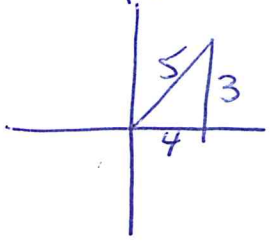
d) $\sec\vartheta$ $\frac{13}{12}$

e) $\csc\vartheta$ $\frac{13}{5}$

f) $\cot\vartheta$ $\frac{12}{5}$

Pythagorean Triple

2. If $\sin\vartheta = \frac{3}{5}$ (O / H) and ϑ is in Quadrant I, find:



a) $\cos\vartheta$ $\frac{4}{5}$

b) $\sin\vartheta$ $\frac{3}{5}$

c) $\tan\vartheta$ $\frac{3}{4}$

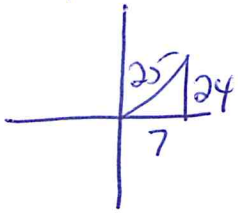
d) $\sec\vartheta$ $\frac{5}{4}$

e) $\csc\vartheta$ $\frac{5}{3}$

f) $\cot\vartheta$ $\frac{4}{3}$

Pythagorean Triple

3. If $\tan\vartheta = \frac{24}{7}$ (O / A) and ϑ is in Quadrant I, find:



a) $\cos\vartheta$ $\frac{7}{25}$

b) $\sin\vartheta$ $\frac{24}{25}$

c) $\tan\vartheta$ $\frac{24}{7}$

d) $\sec\vartheta$ $\frac{25}{7}$

e) $\csc\vartheta$ $\frac{25}{24}$

f) $\cot\vartheta$ $\frac{7}{24}$

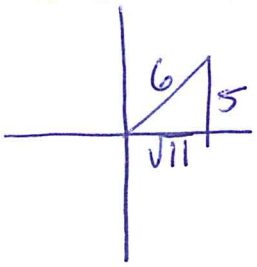
4. If $\sin\vartheta = \frac{5}{6}$ (O/H) and ϑ is in Quadrant I, find:

$5^2+x^2=6^2$ $x=\sqrt{11}$

$25+x^2=36$

$-25 \quad -25$

$\sqrt{x^2}=\sqrt{11}$



a) $\cos\vartheta$ $\frac{\sqrt{11}}{6}$

b) $\sin\vartheta$ $\frac{5}{6}$

c) $\tan\vartheta$ $\frac{5}{\sqrt{11}}$

d) $\sec\vartheta$ $\frac{6}{\sqrt{11}}$

e) $\csc\vartheta$ $\frac{6}{5}$

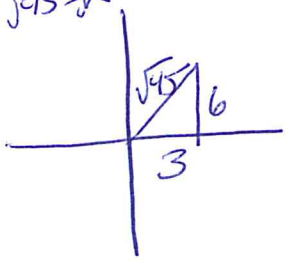
f) $\cot\vartheta$ $\frac{\sqrt{11}}{5}$

5. If $\tan\vartheta = \frac{6}{3}$ (O/A) and ϑ is in Quadrant I, find:

$3^2+6^2=x^2$ $\sqrt{45}=x$

$9+36=x^2$

$\sqrt{45}=\sqrt{x^2}$



a) $\cos\vartheta$ $\frac{3}{\sqrt{45}}$

b) $\sin\vartheta$ $\frac{6}{\sqrt{45}}$

c) $\tan\vartheta$ $\frac{6}{3}$

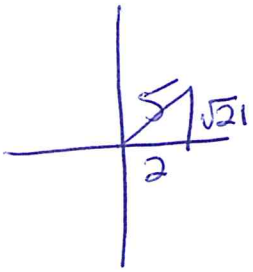
d) $\sec\vartheta$ $\frac{\sqrt{45}}{3}$

e) $\csc\vartheta$ $\frac{\sqrt{45}}{6}$

f) $\cot\vartheta$ $\frac{3}{6}$

$\cos\theta = \frac{2}{5}$

6. If $\sec\vartheta = \frac{5}{2}$ and ϑ is in Quadrant I, find:



a) $\cos\vartheta$ $\frac{2}{5}$

b) $\sin\vartheta$ $\frac{\sqrt{21}}{5}$

c) $\tan\vartheta$ $\frac{\sqrt{21}}{2}$

d) $\sec\vartheta$ $\frac{5}{2}$

e) $\csc\vartheta$ $\frac{5}{\sqrt{21}}$

f) $\cot\vartheta$ $\frac{2}{\sqrt{21}}$

$2^2+x^2=5^2$

$4+x^2=25$

$-4 \quad -4$

$\sqrt{x^2}=\sqrt{21}$

$x=\sqrt{21}$