First name: _____ Last name: _____ Student ID: _____

Trigonometry (2) Homework

1. For each trigonometric ratio, use a sketch to determine in which quadrant the terminal arm of the principal angle lies, the value of the related acute angle and the sign of the ratio.

a) $\sin 315^o$ b) $\tan 225^o$

2. Use the related acute angle to state an equivalent expression.

a) $\sin 160^o$ b) $\cos 300^o$ c) $\tan 110^o$

3. Given $\sin\theta = \frac{5}{13}$ in quadrant I.

a) Sketch in standard position, place the ratio numbers.

b) Evaluate the remaining trig. ratios of θ, then find θ.

4. Given $\sec\theta = -4$ in quadrant II.

a) Sketch in standard position, place the ratio number.

b) Evaluate the remaining trig. ratios of θ, then find θ.

c) Which other quadrant can it be in? Find θ in that quadrant.

5. Point P (-5, –3) is on the terminal arm of angle θ in standard form.
   (a) State the exact values of the primary trigonometric functions.
   (b) Determine the principle value of θ to the nearest degree.

6. Using the unit circle, find ALL angles θ where $0° \leq \theta \leq 720°$ for $\tan \theta = 0$.

7. Determine the coordinates of θ on an unit circle given $\cos \theta = -\frac{\sqrt{3}}{2}$.

8. Evaluate the following without calculator.

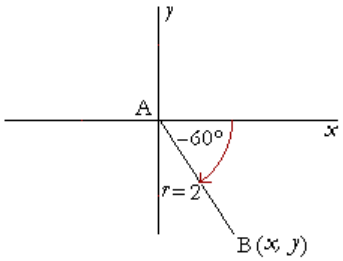
a) $\cos(-30°)$ b) $\sec(-\frac{\pi}{3})$ c) $\tan(-45°)$

9. Evaluate each of the following without calculator in exact value.

a) $\sin 150°$ b) $\cos 135°$ c) $\tan 240°$ d) $\csc(-30)°$

10. Evaluate without calculator: i) $\cos 1380°$ ii) $\sec(-225°)$

11. Radius AB of length 2 sweeps out an angle of $-60°$. What are the coordinates of B?



12. Solve for θ, where $0^\circ \le \theta \le 360^\circ$

a) $\sqrt{3}\tan\theta = 1$ b) $\cos 2\theta = 0.6420$ c) $\csc\theta = -\frac{2\sqrt{3}}{3}$