

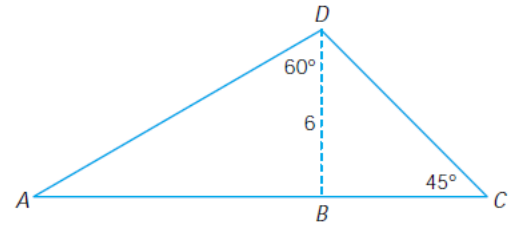
## Analytical Trig Problem Solving In Class Assignment

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- In the following questions, you will work with trigonometric identities.
  - Show that  $(\sin \theta)^2 + (\cos \theta)^2 = 1$  for  $\theta = 30^\circ$ .
  - Show that  $\tan(\theta) = \frac{\sin(\theta)}{\cos(\theta)}$  for  $\theta = 765^\circ$ .
  - Show that  $\sin(2\theta) = 2\sin(\theta)\cos(\theta)$  for  $\theta = -240^\circ$ .
- In each of the following questions, you will be given one trigonometric ratio, which you must then use to determine the value of another trig ratio. Show enough work so that I can follow your solution. In each question, the domain is  $0^\circ \leq \theta \leq 360^\circ$ . **You MUST do Q(d) and ONE OF (a),(b), (c)**
  - Given that  $\sin(\theta) = -\frac{\sqrt{2}}{2}$ , determine the value(s) of  $\cos(\theta)$
  - Given that  $\cos(\theta) = -\frac{\sqrt{3}}{2}$ , determine the value(s) of  $\tan(\theta)$
  - Given that  $\tan(\theta) = -\frac{1}{\sqrt{3}}$ , determine the value(s) of  $\sin(\theta)$
  - Given that  $\sin(\theta) = -\frac{3}{7}$ , determine the value(s) of  $\cos(\theta)$
- Solve each equation for  $\theta$ ,  $0^\circ \leq \theta \leq 720^\circ$ . **You MUST do Q(a) and ONE OF (b),(c), (d)**
  - $(\sqrt{3} - 2\sin\theta)(2\sqrt{2} + 4\cos\theta) = 0$
  - $\sin\theta(1 - \cos\theta) = 0$
  - $2\sin^2\theta - \sin\theta = 0$
  - $\cos^2\theta = \cos\theta$
- The point P (7,-24) is on the terminal arm of an angle in standard position.
  - Sketch the principal angle,  $\theta$ .
  - What is the measure of the related acute angle to the nearest degree? **(CALC required)**
  - What is the measure of  $\theta$  to the nearest degree?
- The point P (-5, -8) is on the terminal arm of an angle,  $\theta$ , in standard position. Determine all values of  $\theta$  for  $-540^\circ \leq \theta \leq 270^\circ$ . **(CALC required)**
- Solve the equation  $\sin(\cos\theta) = 0$ ,  $0^\circ \leq \theta \leq 360^\circ$  without the use of a calculator.

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7. For the diagram given below,
- determine the exact measure of each unknown side length in the diagram.
  - find the exact value of the sine, cosine, and tangent of  $\angle A$  and  $\angle C$ .



## In Class Thinking/Problem Solving Session Scoring Guide

### a. Scoring Guide - Thinking/Problem Solving →

Expert Level	Proficiency Level	Developing Level	Emerging Level	Skill Not Mastered
We set it up correctly by ourselves	We tried and were close, but needed some hints/guidance in setting it up	We tried, but were not close, so we needed a fair bit of help in setting it up	We tried something, couldn't really get anywhere, so someone had to give us the set up and explain it to us	We couldn't get it, so we didn't try anything

### b. Scoring Guide - Application →

Expert Level	Proficiency Level	Developing Level	Emerging Level	Skill Not Mastered
We were able to correctly work through the entire solution and come up with the right answer	We made one minor error in the execution of the solution, but what we were trying to do was correct.	We made an error in the set up of the problem, but could correctly work through our incorrectly set up solution.	We made an error in the set up and made some errors in the execution of our solution.	Everything we tried to do was incorrect

### c. Scoring Guide - Communication →

Expert Level	Proficiency Level	Developing Level	Emerging Level	Skill Not Mastered
Our solution was clear and easy to follow as we clearly and concisely outlined what needed to be done	Our solution was clear and somewhat easy to follow as it wasn't really clearly & logically presented	The reader/marker had to make some inferences about what you did in your solution and why you did it.	The reader/marker couldn't really follow what you were doing and why you were doing it.	You're kidding, right???