A-Day: Due Thurs., Sept 25 (Assigned: 9/23)
B-Day: Due Fri., Sept 26 (Assigned: 9/24)

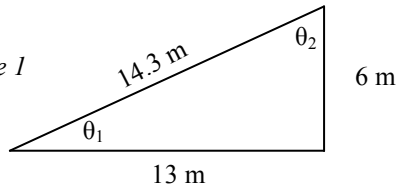
2008 Two Dimensions 2

Use your notes: "Trigonometry Basics" to answer the following.

1. In triangle 1, which is...

   A) ___ adjacent to θ_1?
   B) ___ opposite to θ_2?
   C) ___ adjacent to θ_2?
   D) _____ hypotenuse to θ_1?
   E) _____ hypotenuse to θ_2?
   F) _____ opposite to θ_1?

Triangle 1



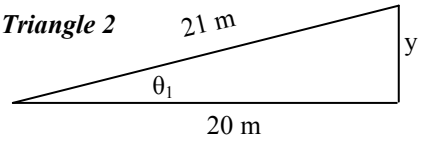
Make SURE that your calculator is in degrees, not radians. Put sin30° into your calculator if it is not 0.5, then you're in radians.

2. Use your calculator to find the following. (*YOU MUST be able to do this easily. If you have trouble come see me or go to the website and do the trigonometry study helps.)*

   A) Sin 65° = _____
   B) If sin θ = 0.56, then θ = _____?
   C) Tan 20° = _____
   D) Cos 40° = _____
   E) Tan 70° = _____
   F) If cos θ = 0.45, then θ = _____?
   G) Sin 35° = _____
   H) If sin θ = 0.56, then θ = _____?
   I) Cos 15° = _____
   J) If sin θ = 0.5 then θ = _____?
   K) If cosθ = 0.866, then θ = _____?
   L) If tanθ = 1, then θ = _____?

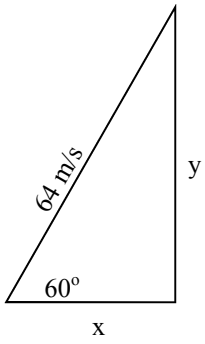
3. On triangle 2, find the y component of 21m (find y).
   (*You have 2 sides of a right triangle—don't make this hard.)*

Triangle 2



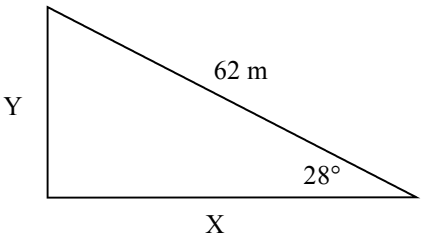
4. Use triangle 3 to answer the following.
   A) Is the y-component the opposite or adjacent side?
   B) Calculate the y-component.

   C) Is the x-component the opposite or adjacent side?
   D) Calculate the x-component.



Triangle 3

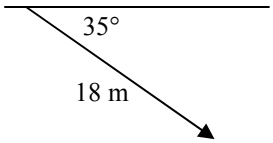
5. On triangle 4,
   A) Don't use 28°, use what angle?
   B) Calculate x and y.



Triangle 4

6. A helicopter raises 40 m straight up into the air.
   A) Is the helicopter moving vertically or horizontally?
   B) What is the x-component of the helicopter's motion?
   B) What is the y-component of the helicopter's motion?

7. A) What angle must we use for the vector at the right?
   (*look at the angles on the compass on your "Vector Basics" notes*)
   B) Starting at the tip of the arrow, draw a vertical line down to the horizontal line to make a triangle.
   C) Calculate the x and y components of the 18 m long vector.
   (*Use the "Vector Basics" notes.)*



Just so we don't forget….

8. An object is thrown into the air going 35 m/s, how long does it take to get back to the ground?
   A) Which two letters of the freefall diagram is this situation?

   B) What are you looking for?

   C) Write the variables of everything you know and solve.
   Variables: Equation and solve.

9. Add these to your equation sheet.

$\sin\theta = \frac{\text{opp}}{\text{hyp}}$
$\cos\theta = \frac{\text{adj}}{\text{hyp}}$
$\tan\theta = \frac{\text{opp}}{\text{adj}}$
X-comp = $V\cos\theta$ and Y-comp = $V\sin\theta$