More Applicaton of Trigonometry
Do Work on Sheet

1) In right triangle ABC, <C is a right angle. If cos A $^7/_{25}$, find:

    a) tan B   b) sin A

2)   An observer in a balloon which is 2000 feet above an airport finds that the angle of depression of a steamboat out at sea is 21°. Find to the **nearest foot** the distance between the balloon and the steamboat.

3)   A boy walked 400 feet into a tunnel which slopes downward at an angle of 7° with the horizontal ground. Find to the **nearest foot** how far he was beneath the surface.

4)   A plane takes off from a field and climbs at an angle of 12°. Find to the **nearest 100 feet** how far the plane must fly to be at an altitude of 1200 feet.

5)   Tom and Henry started from the same place. Tom traveled west at a rate of 30 miles per hour and Henry traveled north at a rate of 40 miles per hour. How far apart were they at the end of one hour?

Continue with the work on the back

6) A 40-foot ladder is leaning against a building. The foot of the ladder is 32 feet from the base of the building. Find to the **nearest degree** the angle which the ladder makes with the ground.

7) A railroad track slopes upward at an angle 7° to the horizontal. Find to the **nearest foot** the vertical distance it rises over a horizontal distance of 1 mile(5,280 feet).

8) A wire stretches from the top of a pole 24 feet high to a stake in the ground which is 18 feet from the foot of the pole. Find the length of the wire.

9) A television tower is 150 feet high and an observer is 120 feet from the base of the tower. Find to the **nearest degree** the angle of elevation of the top of the tower from a point where the observer is standing.

10) The sides of a triangle are 30 inches, 40 inches and 50 inches. Is the triangle a right triangle?

11) To get from his high school to his home, Jamal travels 5.0 miles east and then 4.0 miles north. When Sheila goes to her home from the same high school, she travels 8.0 miles east and 2.0 miles south. What is the measure of the shortest distance, to the *nearest tenth of a mile*, between Jamal's home and Sheila's home?

12) What is an appropriate window to view the function $y = \frac{1}{2}x^3 - 4x^2 + 5$?

13) Use solver to find the roots of the equation $9x^2 = 12x - 4$.