Name:_____   Adv Algebra 2   Homework 8.6: Applied Problems

Standard:

Solve each of the following applied problems. Document all of your work and answer the question with a statement and appropriate labels.

1) An old conveyor belt requires 21 hours to move one day's coal output from the mine to the rail yard. A newer second conveyor belt requires 15 hours to complete the same day's work. How long will it take to move the coal to the rail yard if both belts are used?

2) Pump "A" can unload the Lunar Petro (an oil tanker) in 30 hours and pump "B" (a faster pump) can unload the ship in 24 hours. Because of an approaching storm, both pumps are used. How long will it take to empty the ship?

3) A pharmacist wants to make 1.8 liters of a 10% boric acid solution by mixing 7.5% and 12.5% solutions. How much of each solution should be used?

4) How much of an 18% sulfuric acid solution should be added to a 360 milliliters of 10% solution to obtain a 15% solution?

5) Sharon drove for part of a 150 km trip at 45 mph and the rest of the trip at 75 mph. How far did she drive at each speed if the entire trip took her 2 hours and 40 minutes?

6) An elevator went from the bottom to the top of the tower at an average speed of 4 meters/second, remained at the top for 90 seconds, and then returned to the bottom at 5 meters/second. If the total elapsed time was 4.5 minutes, how high is the tower?