Vector Resolution

1. Stan is pulling a toy by exerting a force of 1.5 N on a string attached to the toy. The string makes an angle of 52o with the floor. Represent the force in component form.
2. Two people are pushing a piano. One person pushes it with 175 pounds at an angle of 60o while the other pushes it with 250 pounds at an angle of 30o. In what direction does the piano move and with how much force?
3. I am in a motorboat crossing a river with a current flowing south at 4 mph. The motorboat travel at 12 mph east. What is the resultant speed and direction of the boat?
4. A plane travelling 500 mph at 30o W of N encounters a wind of 80 mph at 45o N of E. What is the resultant speed and direction of the plane?
5. Two tugboats are pulling an ocean liner. The tugboats are pulling with 500 ton forces each at angles of 17o and 25o. What is the resultant force?
6. A block weighing 200 lbs (this is gravity which acts straight down) is pushed with a 175 pound force at 30o E of N. The force of friction is 75 lbs at 60o S of W. What is the resultant force on the block?
7. Stan and Stella are pushing a box. Stan is pushing with a force of 150 lbs at 65o and Stella is pushing with a force of 95 lbs at 47o. The box has a force of friction that is 50 lbs due west. What is the resultant force on the box?