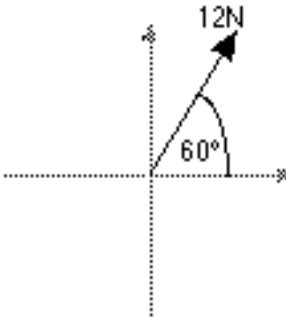
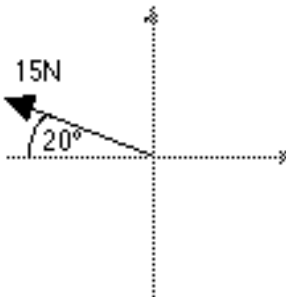
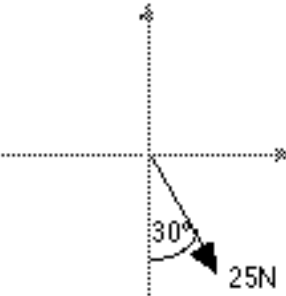
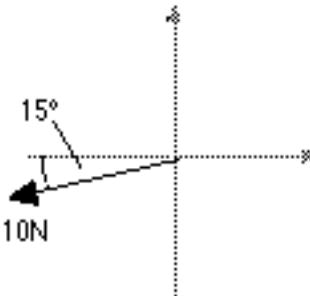


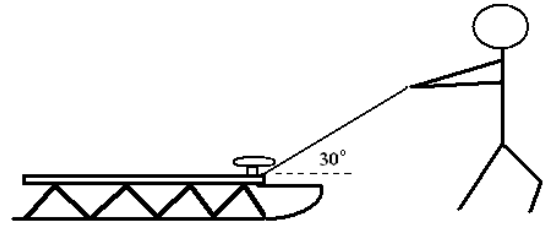
UNIT IV: Worksheet 2b

Determine the \hat{x} and \hat{y} components of each of the force vectors below. Show work.

1. 	
2. 	
3. 	
4. 	

5. A person pulls on a 20 kg sled across the grass with a 50N force acting at 30° angle above the horizontal. The sled moves at a constant speed.

a. Draw a force diagram for the sled.



b Write the equation that describes the forces which act in the x -direction.

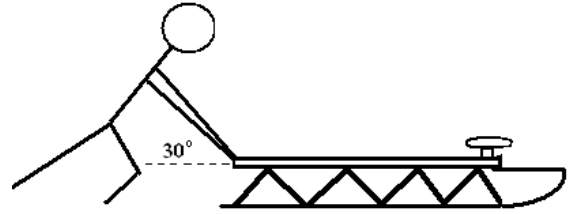
c Write the equation which describes the forces which act in the y -direction.

d. Determine the x and y components of the pulling force.

d. Using the equations from parts a. and b., determine the value of the frictional force. Do the same for the normal force.

6. Suppose in the person were *pushing* down at a 30° angle with 50 N of force. The sled still moves at a constant speed.

a. Draw a force diagram for the sled.



b. Write the equation that describes the forces which act in the x -direction.

c. Write the equation that describes the forces which act in the y -direction.

d. Using the equations from parts a. and b., determine the value of the frictional force. Do the same for the normal force.