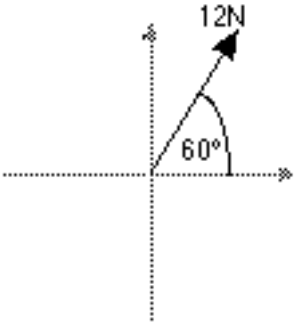
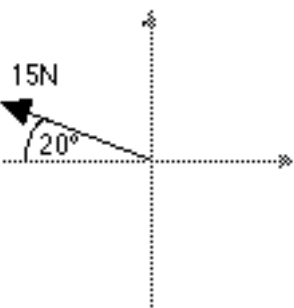


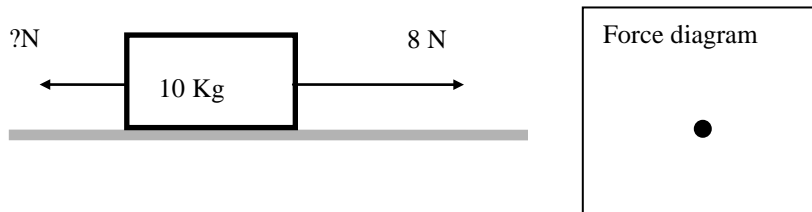
Unit 3: Worksheet 2

Determine the x and y components of each of the force vectors below. Show work.

| | |
|---|--|
| <p>1.</p>  | |
| <p>2.</p>  | |

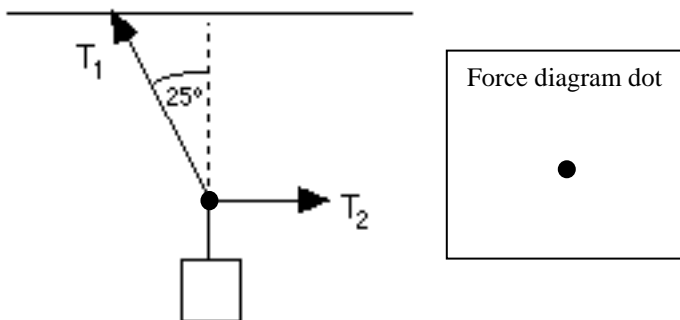
3. The box below slides on a frictionless surface at a constant velocity in the x direction.

a) Write an equation summing the forces. (What should the net force equal?)



b) Solve for unknown force.

4.



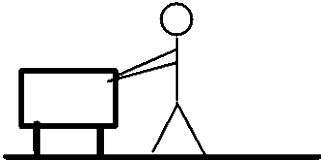
a) Write the equation which describes the forces which act in the x-direction.

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

c) Suppose that the magnitude of T_1 is 50N. Determine the magnitude of T_2 .

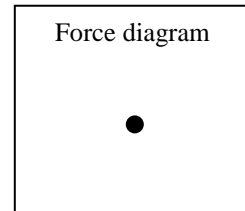
d) Determine the weight of the box. What is its mass?

5.



A person pulls on a 50 kg desk with a 200N force acting at 30° angle above the horizontal. The desk does not budge.

Draw a force diagram for the desk.



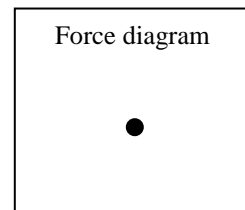
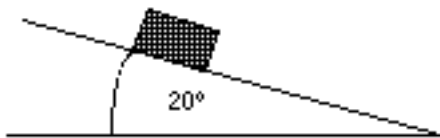
a) Write the equation that describes the forces which act in the x-direction.

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

c) Determine the x and y components of the force exerted by the person.

d) Determine the value of the frictional force. Do the same for the normal force.

6. In the space at right, draw the force diagram for the box, which rests motionless on the ramp.



a) Write the equation which describes the forces which act in the x-direction.

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

c) If the mass of the box is 8.0 kg, determine the value of the normal force & frictional force.