Newton laws worksheet 12
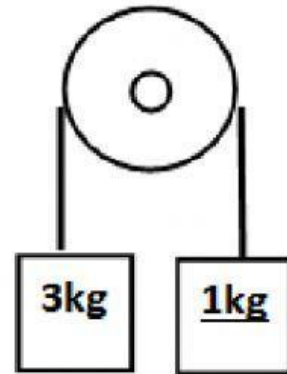
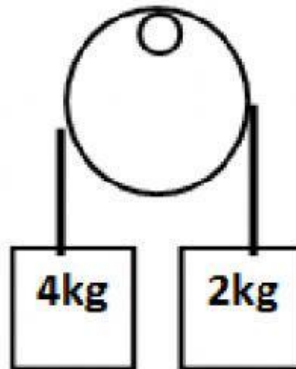## Exercise 9

This is a frictionless pulley.

Calculate:

1.1 The force of gravity on each box
1.2 The acceleration of the system
1.3 The tension in the cable

3kg   **1kg**

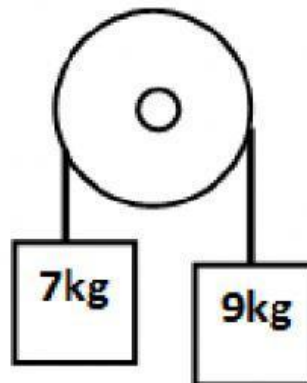2. This pulley is frictionless.
Calculate:

2.1 The force of gravity
2.2 The acceleration of the system
2.3 The tension in the string

4kg   **2kg**
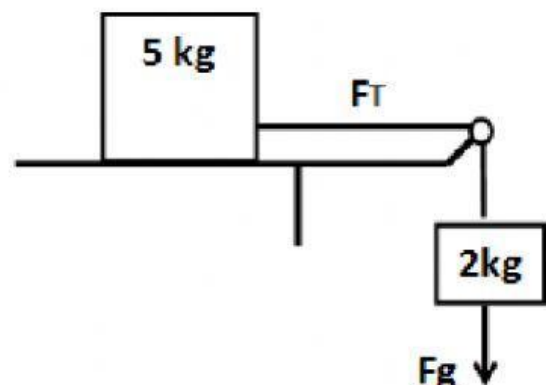
3. This pulley is frictionless.

Calculate:

3.1 The acceleration of the system

3.2 The tension in the string

7kg   **9kg**

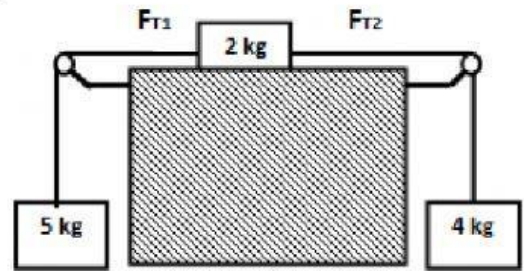4. The motion of the system shown in the sketch is

frictionless.
Calculate:
4.1 The acceleration of the system
4.2 The tension in the string

5 kg

F_T

2kg

F_g

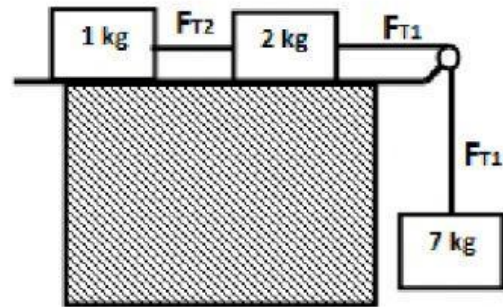5. 3 blocks are connected with string as shown in the diagram.

Calculate:

5.1 Draw a force diagram for each block

5.2 The acceleration of the system

5.3 Tension (F_{T1} & F_{T2}) in the two strings

6. Draw or Determine:
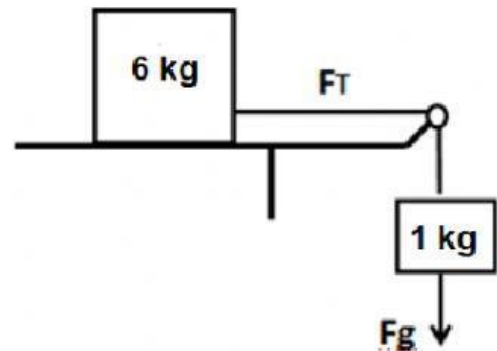
6.1 A force diagram for each block

6.2 Acceleration of the system

6.3 Tension in F_{T1}

7. The friction on the system on the right is 2 N.

Calculate
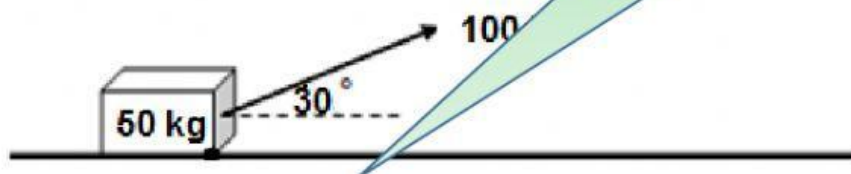
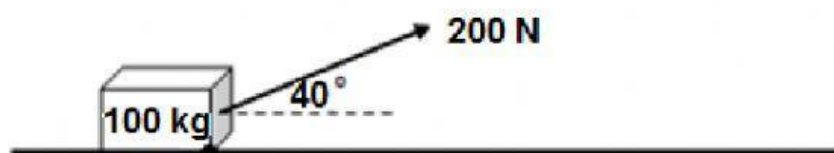7.1 the acceleration of the system

7.2 the F_T

Forces at an angle

Exercise 10

Determine the horizontal and vertical components of the following forces:
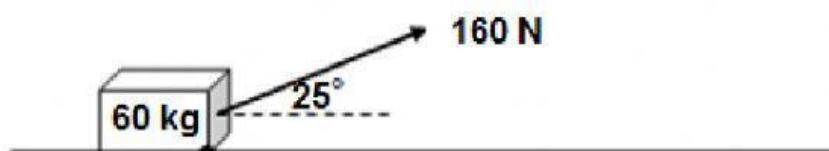
1.

50 kg   30°   100

2.

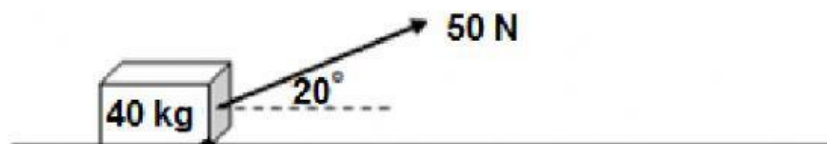100 kg   40°   200 N

3.

60 kg   25°   160 N

4.

40 kg   20°   50 N

I have finished this worksheet   yes