PENANG SANGAM HIGH SCHOOL
YEAR 12 PHYSICS
WEEK 4

1. A desktop has an area of 160 cm^2. The area when changed into m^2 will be **best** represented by

   A. 0.0016 m^2
   B. 0.016 m^2
   C. 1.6 m^2
   D. 16000 m^2

2. Which of the following is Newtons third law of motion?

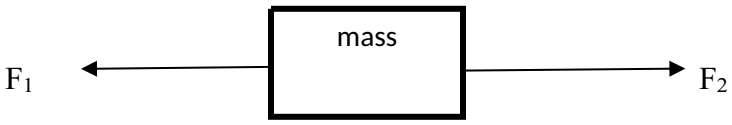
   A. Every force causes a reaction

   B. The forces acting on a body are always equal and opposite

   C. If there is no resultant force on the body then there is no acceleration

   D. To every action force there is an equal and opposite reaction force.

3. The only forces acting on the object shown below are given as F_1 and F_2 with equal magnitude.



Which of the following describes the motion of the mass?

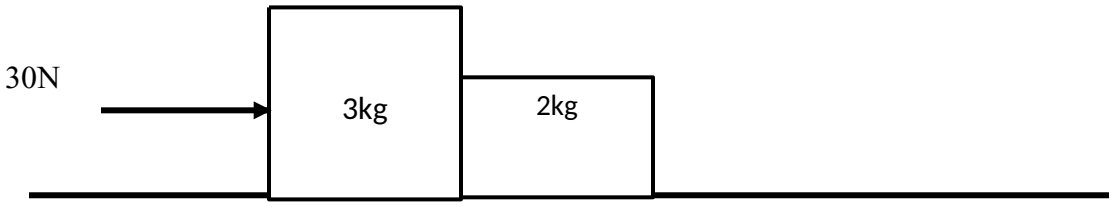
   A. The object is at rest

   B. The object is accelerating to the left

   C. The object is moving with constant velocity

   D. The object is accelerating to the right

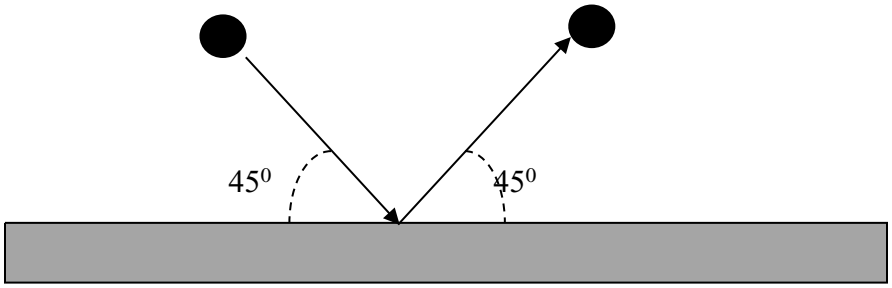
4. A system of masses is shown below



The acceleration of the 2kg mass is

A. $15 m/s^2$ B. $10 m/s^2$ C. $5 m/s^2$ D. $6 m/s^2$

5. A basketball strikes the ground at 10 m/s and rebounds at 10 m/s as shown in the diagram below.

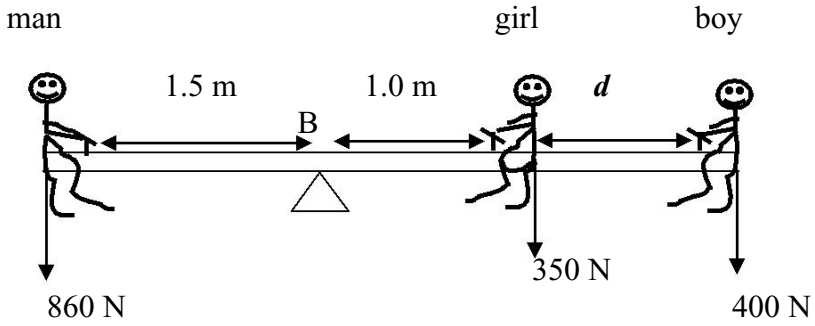


(i) State the formula used to calculate the change in velocity.

(ii) State the direction for change in velocity of the basketball. (use vector subtraction)

(iii) State the magnitude of the basketball's change in velocity. (use Pythagoras theorem)

6. The diagram below shows a man weighing 860 N sitting on a see-saw 1.5 m from its point of balance. He is balanced by a boy and a girl sitting on the other side. The girl, who weighs 350 N, is 1.0 m from the pivot and the boy of weight 400 N is behind the girl.



What distance, ***d***, behind the girl should the boy sit in order to balance the see-saw? (use equilibrium condition CWM = ACWM, all distances must be form the pivot)