

وزارة التربية والنعليى

إإدارة المركزية لنطوير المناهج

<u>إدارة ننهية مادة الرياضيات</u>

SI.SY

## ادامان ونقيبمان لمنهج الرياضيان

## <u>للصف الثانى الثانوى[ علمى]</u>

## <u>للمام الدراسي 2024 / 2025</u>



**Classroom Performance Week: (14) Semester (2) Mathematics - Applications Grade: Second Secondary (Science)** 

- (1) A body with a mass of 800 grams is placed on a smooth plane inclined to the horizontal at an angle whose tangent is  $\frac{1}{2}$ . A force of mag.  $200\sqrt{5}$ gm.wt acts on it in the direction of the plane's greatest slope upward. Find the magnitude and direction of the acceleration. If the force ceases to act 5 seconds after the start of the movement, find when the body changes direction.
- (2) A body with a mass of m kg is placed on a smooth plane inclined to the horizontal at an angle of  $\theta^{\circ}$ , where sine  $\theta = \frac{3}{5}$ . a force of magnitude 86 kg.wt in the direction of the line of greatest slope upward. As a result of this force, the body moves from rest to the top of the plane a distance of 200 cm in two seconds. Find the mass of the body.
- (3) A rough inclined plane, 5 meters long and 3 meters high, has a body placed at rest on it. The body slides down the plane from its top. The acceleration of the body is 28 cm/s<sup>2</sup>. Find the coefficient of kinetic friction (μ<sub>k</sub>) between the body and the plane.
- (4) A rough inclined plane, 5 meters long and 3 meters high, has a body placed at rest on its top. The body slides down the plane. The coefficient of kinetic friction ( $\mu_k$ ) between the body and the plane is equal to  $\frac{5}{7}$ . Find the velocity of the body after it has traveled 200 cm on the plane.
- (5) A body with a mass of 4 kg is placed on a rough inclined plane, inclined at an angle of 30° to the horizontal. A horizontal force of 40 N acts on the body towards the plane, causing the body to move at a constant speed. Find the coefficient of kinetic friction (μ<sub>k</sub>) between the body and the plane.





- (6) A body of weight 5 kg. wt. is placed on a rough horizontal plane. A horizontal force of 34.5 N acts on it, causing it to move along the horizontal plane with a uniform acceleration of 2 m/s<sup>2</sup>. Find the coefficient of kinetic friction between the body and the plane.
- (7) In the opposite figure: (29) newton N  $a = 1 \text{ m./sec}^2$ A body with a mass of 5 kg is placed on a rough 10) newton horizontal plane. F the magnitude of the ..... kinetic friction force. Find the coefficient of kinetic friction ( $\mu_k$ ) between the body and the plane. 5 g (8) In the opposite figure:  $a = 2 \text{ m./sec}^2$ A body with a mass of 5 kg is placed on a rough horizontal plane. F the magnitude of the kinetic friction force. Find the coefficient of 5 g 39v2) newton kinetic friction ( $\mu_k$ ) between the body and the plane. (40) newton In the opposite figure: (9)  $a=3m./sec^{2}$ A body with a mass of 5 kg is placed on a rough 60 horizontal plane. F the magnitude of the kinetic friction force. Find the coefficient of kinetic friction  $(\mu_k)$  between the body and the plane. 5 g
- (10) Boxes are moved in a factory by sliding down an inclined plane 25 meters long and 15 meters high. Find the speed of the box that started moving from the rest at the top of the plane, when it reaches the base of the plane, if the plane is rough and the coefficient of kinetic friction between them is equal to  $\frac{1}{2}$ .