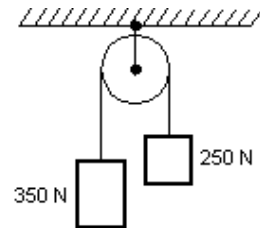


بسم الله الرحمن الرحيم
نموذج اختبار

1. A particle goes from $x = -2$ m, $y = 3$ m, $z = 1$ m to $x = 3$ m, $y = -1$ m, $z = 4$ m. Its displacement is:
 - a) $(1 \text{ m})\hat{i} + (2 \text{ m})\hat{j} + (5 \text{ m})\hat{k}$
 - b) $(5 \text{ m})\hat{i} - (4 \text{ m})\hat{j} + (3 \text{ m})\hat{k}$
 - c) $-(5 \text{ m})\hat{i} + (4 \text{ m})\hat{j} - (3 \text{ m})\hat{k}$
 - d) $-(5 \text{ m})\hat{i} - (2 \text{ m})\hat{j} = (3 \text{ m})\hat{k}$
2. A projectile is fired over level ground with an initial velocity that has a vertical component of 20 m/s and a horizontal component of 30 m/s. The distance from launching to landing points is:
 - a) 40 m
 - b) 60 m
 - c) 80 m
 - d) 122.5 m
3. A stone is tied to the end of a string and is swung with constant speed around a horizontal circle with a radius of 1.5 m. If it makes two complete revolutions each second, its acceleration is:
 - a) 0.24 m/s^2
 - b) 240.7 m/s^2
 - c) 2.4 m/s^2
 - d) 24 m/s^2

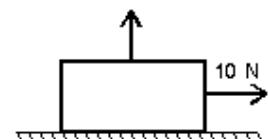
4. Two blocks weighting 250 N and 350 N respectively, are connected by a string that passes over a massless pulley as shown. The tension in the string is:



- a) 210 N
 - b) 410 N
 - c) 290.8 N
 - d) 500 N
5. A 6-kg object is moving south. A net force of 12 N north on it result in the object having an acceleration of:
 - a) 2 m/s^2 , north
 - b) 2 m/s^2 , south
 - c) 18 m/s^2 , north
 - d) 18 m/s^2 , south
 6. The "reaction" force does not cancel the "action" force because:
 - a) the action force is greater than the reaction force
 - b) they are in the same direction
 - c) the reaction force is greater than the action force
 - d) they act on different bodies

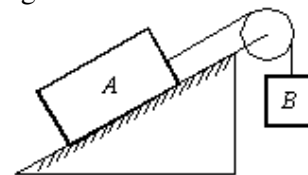
7. A box with a weight of 50 N rests on a horizontal surface with a coefficient of static friction is 0.4. If person pulls horizontally on it with a force of 10 N , then

- a) the block will not move
- b) the block will move to the left
- c) the block will move to the right
- d) the block will move upward



8. Block A, with a mass of 10 kg, rests on a 30° incline. The coefficient of kinetic friction is 0.20. The attached string is parallel to the incline and passes over a massless, frictionless pulley at the top. Block B, with a mass of 8.0 kg, is attached to the dangling end of the string. The acceleration of B is:

- a) 0.69 m/s^2 , up the plane
- b) 0.69 m/s^2 , down the plane
- c) 2.6 m/s^2 , up the plane
- d) 2.6 m/s^2 , down the plane



Answer key:

- 1-b
- 2-d
- 3-b
- 4-c
- 5-a
- 6-d
- 7-a
- 8-b