



McRoberts Secondary



Forces Quiz 2025-10-27

Personal Data

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Given Name:	
Signature:	
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Registration Number

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In this section **no** changes or modifications must be made!

Scrambling

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Exam ID(11)

25102700002

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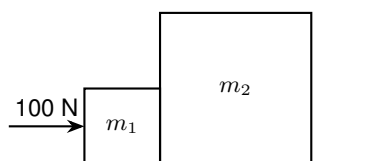
Only clearly marked and positionally accurate crosses will be processed!

Answers 1 - 15

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	a	b	c	d



1. A net force of 61 N is applied to an object, and it accelerates at 69 m/s/s in the direction of the applied force. What is the mass of the object?
 - a. 1.1 kg
 - b. 0.78 kg
 - c. 4200 kg
 - d. 0.88 kg
2. A box slides on the floor in the $+x$ direction. It slows down and comes to a stop with a constant acceleration of -5.94 m/s^2 . What is the coefficient of kinetic friction between the object and the floor?
 - a. 0.606
 - b. 0.308
 - c. 0.503
 - d. 0.834
3. A person stands on top of a box on the ground. What is the magnitude of the normal force that the ground applies to the box?
 - a. 402 N
 - b. 304 N
 - c. 397 N
 - d. 123 N
4. The gravitational force exerted by a large body, such as the Earth, is called
 - a. inertial mass
 - b. weight
 - c. gravitational mass
 - d. gravitational field strength
5. A person of mass 38 kg pushes on a wall with 65 N of force. What is the magnitude of the force that the wall exerts on the person?
 - a. 370 N
 - b. 6.6 N
 - c. 640 N
 - d. 65 N
6. Two boxes are in contact with each other on a frictionless table. The mass of the first box is $m_1 = 61 \text{ kg}$ and the mass of the second box is $m_2 = 305 \text{ kg}$. If you push on the first box with a horizontal force of 100 N to the right, then the second box will experience a net force of



- a. 83.3 N
- b. 45.6 N
- c. 95.1 N
- d. 77.8 N

7. What is the net force on a person who is standing in an elevator moving up with a constant velocity of 1.00 m/s?
- 1.00 N, down
 - 0 N
 - 1.00 N, up
 - It depends on the mass of the person.
8. A box, of mass M , is suspended by a string from the ceiling inside an elevator. The elevator is moving upward, but slowing down. The tension in the string is
- less than Mg .
 - equal to Mg .
 - greater than Mg .
 - zero.
9. In a rugby game, Bob (mass = 98 kg) tackles Joe (mass = 84 kg) and knocks Joe to the ground. During the collision who applied the greater force on whom?
- Bob applied a greater force on Joe (than Joe did on him).
 - Joe applied a greater force on Bob (than Bob did on him).
 - Bob and Joe applied the same magnitude force on each other.
 - It depends on the relative speeds of Bob and Joe.
10. Why is a greater force needed to start moving a heavy box from rest than to keep pushing it with constant velocity? In the choices below, μ_k is the coefficient of kinetic friction and μ_s is the coefficient of static friction.
- The normal force is greater when the box is at rest.
 - The inertia of the box is greater when it is at rest.
 - $\mu_s < \mu_k$
 - $\mu_k < \mu_s$
11. Which has greater inertia? A bowling ball of mass 6 kg traveling at 4 m/s or a bullet of mass 0.06 kg traveling at 400 m/s?
- The bowling ball and the bullet have the same inertia.
 - Not enough information to determine.
 - The bowling ball.
 - The bullet.
12. An object weight 12 N on Earth. What is its mass?
- 1.2 kg
 - 1 kg
 - 12 kg
 - 120 kg
13. A box, of mass M , is suspended by a string from the ceiling inside an elevator. The elevator is traveling downward with a constant speed. The tension in the string is
- less than Mg .
 - equal to Mg .
 - greater than Mg .
 - impossible to determine without knowing the speed.

14. What force is needed to keep a 52-kg box moving at a constant velocity across a warehouse floor if the coefficient of kinetic friction between the box and the floor is 0.54?
- a. 28 N
 - b. 170 N
 - c. 280 N
 - d. 110 N
15. The mass of an object is 68 kg. What is its weight on Earth?
- a. 670 N
 - b. 68 N
 - c. 780 N
 - d. 6.9 N