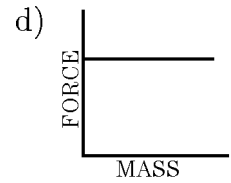
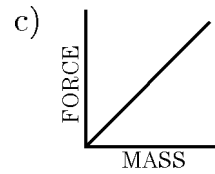
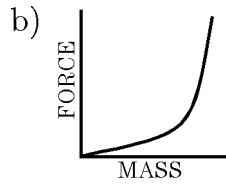
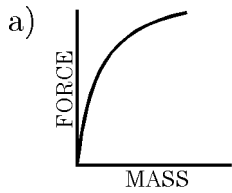


Final Exam Review - Mult Ch.

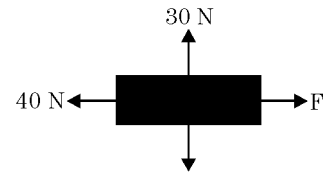
- A person walks 5.0 kilometers north, then 5.0 kilometers east. His displacement is closest to
 - 7.1 kilometers northwest
 - 10 kilometers northwest
 - 10 kilometers northeast
 - 7.1 kilometers northeast
- Which is a scalar quantity
 - displacement
 - force
 - acceleration
 - distance
- Which of the following is a vector quantity?
 - speed
 - velocity
 - distance
 - mass
- Distance is to displacement as
 - velocity is to acceleration
 - force is to weight
 - speed is to velocity
 - impulse is to momentum
- A group of bike riders took a 4.0 hour trip. During the first 3.0 hours, they traveled a total of 50 kilometers, but during the last hour they traveled only 10 kilometers. What was the group's average speed for the entire trip?
 - 40 km/hr
 - 60 km/hr
 - 30 km/hr
 - 15 km/hr
- A car accelerates uniformly from rest to a speed of 10 meters per second in 2 seconds. The acceleration of the car is
 - 0.2 m/sec^2
 - 5 m/sec^2
 - 20 m/sec^2
 - 10 m/sec^2
- A car, starting from rest, accelerates at 4.0 m/sec^2 . What is its velocity at the end of 8.0 seconds?
 - 0.50 m/sec
 - 16 m/sec
 - 32 m/sec
 - 2.0 m/sec
- An object starting from rest accelerates at a rate of $3.0 \text{ meters/seconds squared}$ for 6.0 seconds. The velocity of the object at the end of this time is
 - 3.0 m/s
 - 18 m/s
 - 0.50 m/s
 - 2.0 m/s
- An object, starting from rest, accelerates at a rate of $3.0 \text{ meters per second}^2$ for 6.0 seconds. The velocity of the object at the end of this time is
 - 0.50 m/s
 - 18 m/s
 - 2.0 m/s
 - 3.0 m/s
- If an object's velocity changes from 25 meters per second to 15 meters per second in 2.0 seconds, the magnitude of the object's acceleration is
 - 7.5 m/s^2
 - 20 m/s^2
 - 5.0 m/s^2
 - 13 m/s^2

31. Which graph best represents the relationship between the masses of different objects and the gravitational force acting on them as they fall freely near the Earth's surface?



32. Four forces are acting on an object as shown in the diagram. If the object is moving with a constant velocity, the magnitude of force F must be

- a) 0 N b) 40 N c) 100 N d) 20 N

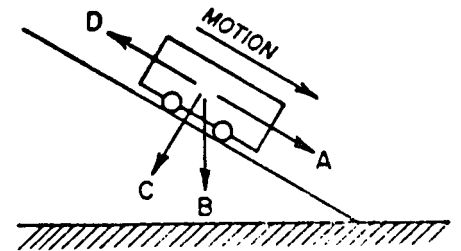


33. A force of 50 newtons causes an object to accelerate at 10 meters per second squared. What is the mass of the object?

- a) 500 kg b) 5.0 kg c) 0.20 kg d) 60 kg

34. A cart rolls down an inclined plane with constant speed as shown in the diagram. Which arrow represents the direction of the frictional force?

- a) D b) B c) A d) C



35. What is an essential characteristic of an object in equilibrium?

- a) zero kinetic energy b) zero acceleration
c) zero potential energy d) zero velocity

36. The magnitude of the force that a baseball bat exerts on a ball is 50 newtons. The magnitude of the force that the ball exerts on the bat is

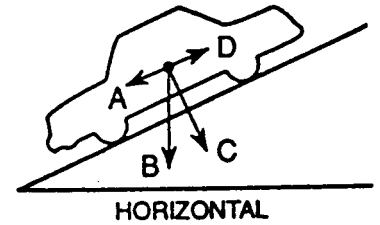
- a) 250 N b) 5.0 N c) 50 N d) 10 N

37. Which two terms represent a vector quantity and the scalar quantity of the vector's magnitude, respectively?

- a) speed and time b) acceleration and velocity
c) weight and force d) displacement and distance

38. The diagram represents a car resting on a hill. Which vector best represents the weight of the car?

- a) *A* b) *B* c) *D* d) *C*



39. Which statement explains why a book resting on a table is in equilibrium?

- a) The weight of the book equals the weight of the table.
 b) The acceleration due to gravity is 9.8 m/s^2 for both the book and the table.
 c) The weight of the book and the table's upward force on the book are equal in magnitude, but opposite in direction.
 d) There is a net force acting downward on the book.

40. A student weighing 500 newtons stands on a spring scale in an elevator. If the scale reads 520 newtons, the elevator must be

- a) accelerating downward b) moving downward at constant speed
 c) moving upward at constant speed d) accelerating upward

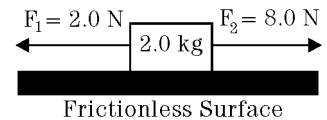
41. A box decelerates as it moves to the right along a horizontal surface, as shown in the diagram. Which vector best represents the force of friction on the box?

- a) \longrightarrow b) \uparrow c) \longleftarrow d) \downarrow



42. Two forces are applied to a 2.0-kilogram block on a frictionless, horizontal surface, as shown in the diagram. The acceleration of the block is

- a) 5.0 m/s^2 to the left b) 3.0 m/s^2 to the right
 c) 3.0 m/s^2 to the left d) 5.0 m/s^2 to the right

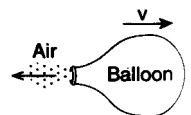


43. A 3.0-kilogram mass weighs 15 newtons at a given point in the Earth's gravitational field. What is the magnitude of the acceleration due to the gravity at this point?

- a) 9.8 m/s^2 b) 45 m/s^2 c) 0.20 m/s^2 d) 5.0 m/s^2

44. As shown in the diagram, an inflated balloon released from rest moves horizontally with velocity v . The velocity of the balloon is most likely caused by

- a) action-reaction b) rolling friction
 c) gravitational attraction d) centripetal force



Answer List

- | | | | |
|-------|-------|-------|-------|
| 1. d | 2. d | 3. b | 4. c |
| 5. d | 6. b | 7. c | 8. b |
| 9. b | 10. c | 11. c | 12. a |
| 13. a | 14. b | 15. c | 16. c |
| 17. a | 18. a | 19. c | 20. b |
| 21. c | 22. b | 23. d | 24. a |
| 25. a | 26. a | 27. a | 28. d |
| 29. c | 30. b | 31. c | 32. b |
| 33. b | 34. a | 35. b | 36. c |
| 37. d | 38. b | 39. c | 40. d |
| 41. c | 42. b | 43. d | 44. a |