

# Quizizz

## Physics Sem 1 Final Review

Name : \_\_\_\_\_

Class : \_\_\_\_\_

Date : \_\_\_\_\_

- Which fundamental force holds together an atomic nucleus?  
 a) Strong Nuclear                       b) Electromagnetic  
 c) Weak Nuclear                       d) Gravity
- Which fundamental force is responsible for the bonds between molecules?  
 a) Strong Nuclear                       b) Electromagnetic  
 c) Weak Nuclear                       d) Gravity
- Which fundamental force is responsible for the attraction between all things with mass?  
 a) Strong Nuclear                       b) Electromagnetic  
 c) Weak Nuclear                       d) Gravity
- "For every force there is an equal and opposite force." This is...  
 a) Newton's 1st Law                       b) Newton's 2nd Law  
 c) Newton's 3rd Law                       d) Not one of Newton's Laws
- What is the contact force perpendicular to something resting on a surface?  
 a) Normal                       b) Friction  
 c) Gravity                       d) Tension
- What is the force that comes from something hanging or being pulled by a rope (or string, wire, etc)?  
 a) Normal                       b) Gravity  
 c) Tension                       d) Friction
- What is the force that resists motion of two surfaces moving across each other?  
 a) Normal                       b) Gravity  
 c) Tension                       d) Friction

8. "An object at rest stays at rest and an object in motion stays in motion, unless acted on by an unbalanced outside force." This is...

a) Newton's 1st Law  b) Newton's 2nd Law  
 c) Newton's 3rd Law  d) Not one of Newton's Laws

9. A hover-puck is floating on a table but not moving. What forces are acting on the hover-puck?

a) Force of Gravity - Only  b) Force of Gravity and Force of Friction  
 c) Force of Gravity and Normal Force  d) Force of Gravity and Force Push from the air.

10. A box is sitting at rest on the floor. If an unbalanced force is applied to the box, the box will...

a) move at a constant velocity  b) speed up  
 c) slow down  d) not move at all

11. What forces are acting on an object that is in free fall? (ignore air resistance)

a) only gravity  b) gravity and normal force  
 c) gravity and friction  d) no forces

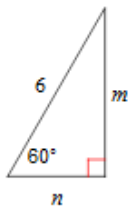
12. Your friend tries to drive up an icy hill on bald tires. He asks you to get out and help push the car up the hill. You apply a force of 285N but the car still pushes you backward as it slides down the hill. What is the force of the car on you?

a) less than 285N  b) 285N  
 c) more than 285N  d) depends on the mass of the car

13. A box is sitting on the front counter. The mass of the box is 8.2 kg. What normal force must the counter use to support the box?

a) 8.2 N  b) 18 N  
 c) 80.4 N  d) 0.84 N

14. What is the value of (n)?



a) 6  b) 3  
 c) 5.2  d) 6.93

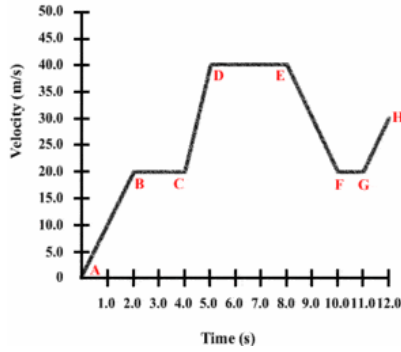
15. A baseball player slides into second base. The player has a mass of 75 kg and the coefficient of friction is ( $\mu = 0.48$ ). What is the force of friction acting on the player?
- a) 735 N  b) 353 N
- c) 36 N  d) 156 N
16. Unbalanced forces lead to
- a) Constant velocity  b) Changing velocity
- c) Gravity  d) No motion
17. A skier is traveling down a hill at constant velocity. What does this mean about the forces?
- a) They are unbalanced  b) They are balanced
- c) Need more information
18. If a hot air balloon rider is moving up at constant velocity, the total force on the person is:
- a) up  b) down
- c) zero  d) depends how heavy the person is
19. If a hot air balloon rider is moving up faster and faster, the total force on the person is:
- a) up  b) down
- c) zero  d) depends how heavy the person is
20. If a hot air balloon rider is moving up but slowing down, the total force on the person is:
- a) up  b) down
- c) zero  d) depends how heavy the person is
21. If a hot air balloon rider is moving down and speeding up, the total force on the person is:
- a) up  b) down
- c) zero  d) depends how heavy the person is

22. If a hot air balloon rider is moving down and slowing to a stop, the total force on the person is:
- a) up                                       b) down
- c) zero                                       d) depends how heavy the person is
23. A person is riding Power Tower at Valleyfair while it is moving up and slowing to a stop. What sensation of weight would this person feel?
- a) lighter than usual                       b) heavier than usual
- c) usual weight                               d) weightless
24. A 10 kg drone accelerates upward at  $2.0 \text{ m/s}^2$ . What force (push) is exerted by the air on the drone? (hint: draw the vector addition diagram to help solve)
- a) 98 N                                       b) 20 N
- c) 118 N                                       d) 78
25. A 1500 kg Ford Truck can go from rest to a speed of 30 m/s in 8.7 s. What total force must act upon the car in order to make this happen?
- a) 261 N                                       b) 5160 N
- c) 14700 N                                       d) 19860 N
26. An 80 kg person is riding an elevator that is accelerating upward at a rate of  $1.0 \text{ m/s}^2$ . Calculate the force gravity on the person.
- a) 80 N                                       b) 180 N
- c) 864 N                                       d) 784 N
27. An 80 kg person is riding an elevator that is accelerating upward at a rate of  $1.0 \text{ m/s}^2$ . Calculate the total force,  $\Sigma F$ , on the person.
- a) 80 N                                       b) 180 N
- c) 864 N                                       d) 784 N
28. When you tell the direction and speed of an object, you give its
- a) motion                                       b) velocity
- c) acceleration                               d) mass

29. Speed is different from velocity because

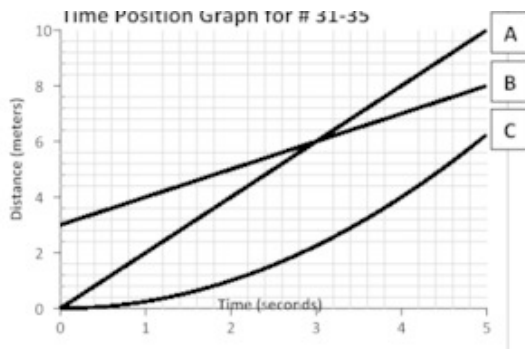
- a) Velocity has a direction
- b) Speed uses Distance /Time
- c) Velocity doesn't include time
- d) Velocity doesn't include distance

30. During which interval is the object speeding up?



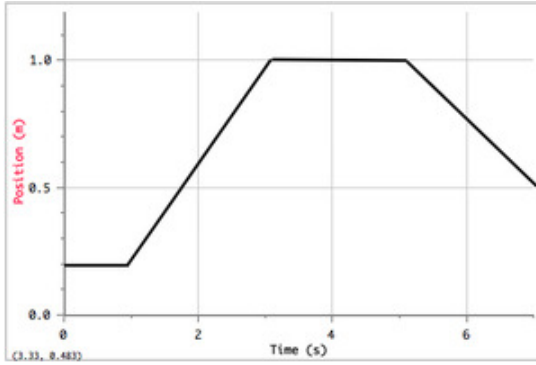
- a) A to B
- b) B to C
- c) D to E
- d) E to F

31. Which runner had a head start?



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

32. from 3rd second to 5th second, the object is



- a) moving at a constant speed
- b) speeding up
- c) not moving
- d) slowing down

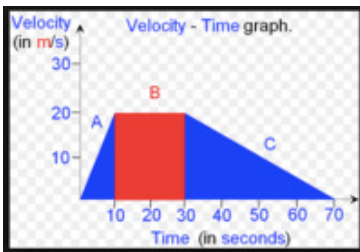
33. On a position vs. time graph, the steeper the slope \_\_\_\_\_

- a) the slower the speed
- b) the faster the speed
- c) less acceleration
- d) greater acceleration

34. Which of the following is a unit for acceleration?

- a) km/s
- b)  $m/s^2$
- c) mi/hr
- d) ft

35. What is the displacement for  $t=0s$  to  $t=30s$  ?  
(Labeled A & B)



- a) 100 m
- b) 400 m
- c) 500 m
- d) 600 m

36. How far did this object move (displacement) in 4 seconds?



- a) 8 m
- b) 10 m
- c) 12 m
- d) 14 m

37. Acceleration is

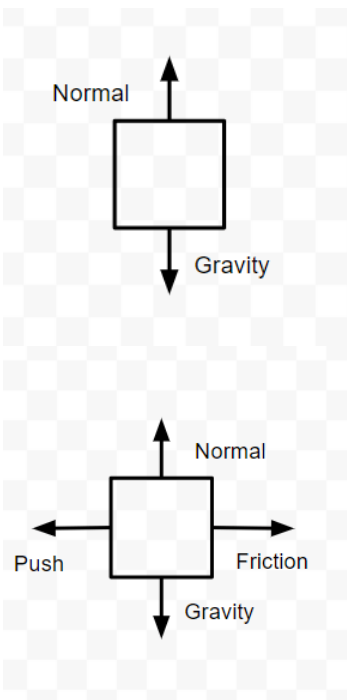
- a) increasing speed
- b) decreasing speed
- c) changing direction
- d) all of the above

38. Bill runs 400 meters to Andy's house, turns around, and runs 400 meters back home. What is Bill's displacement?

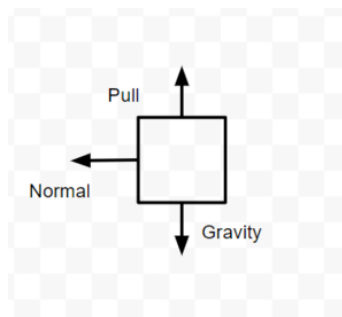
- a) 0 meters
- b) 400 meters
- c) 800 meters
- d) 1600 meters

39. A leftward force is applied to a crate to push it across the floor at a constant speed. Which is the correct force diagram?

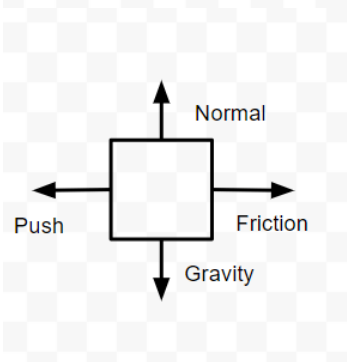
a)



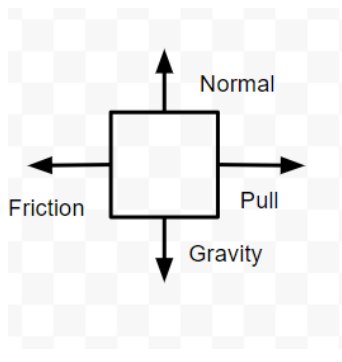
b)



c)

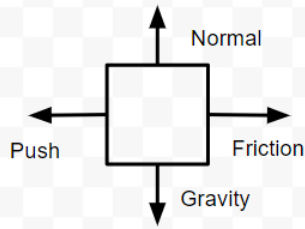


d)

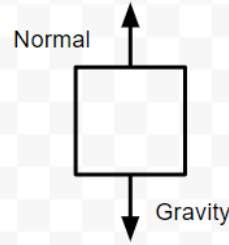


40. A rightward force is applied to a dresser to accelerate it to the right across the bedroom floor.

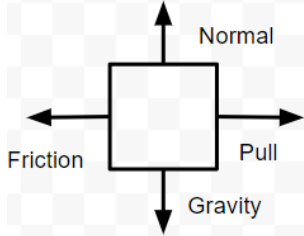
a)



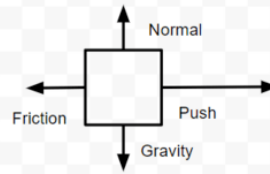
b)



c)

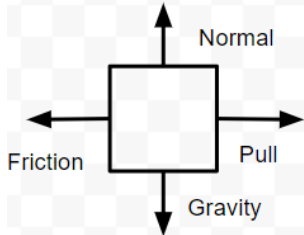


d)

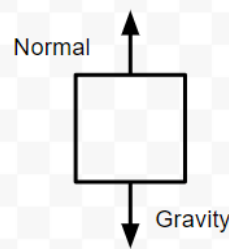


41. A hockey puck glides to the right across the ice at a constant speed.

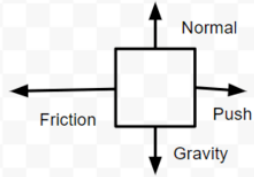
a)



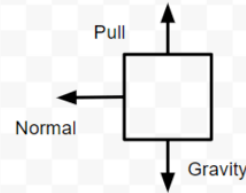
b)



c)

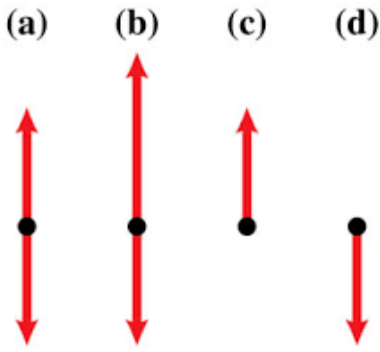


d)





42. Which of the following is FALSE?



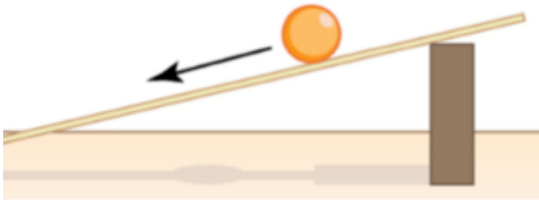
a) 'a' is not possible

b) 'b' is accelerating upward due to balanced forces

c) 'c' is accelerating upward due to a net upward force

d) 'd' is accelerating downward due to being the only force present

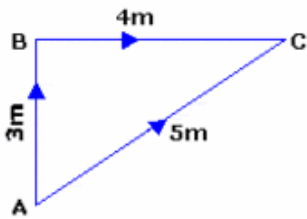
43. Are forces balanced or unbalanced when a marble speeds up rolling down a ramp?



a) Balanced

b) Unbalanced

44. You follow the path: A --> B --> C. What is the distance traveled?



Distance and displacement

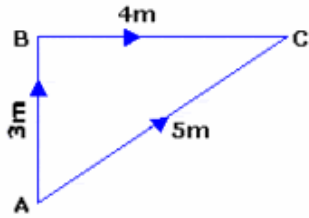
a) 3

b) 7

c) 12

d) 5

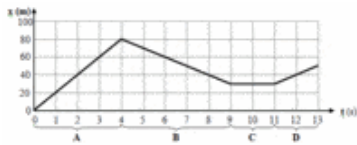
45. You follow the path: A --> B --> C. What is the displacement?



Distance and displacement

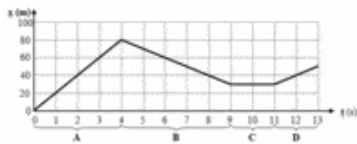
- |                                |                               |
|--------------------------------|-------------------------------|
| <input type="checkbox"/> a) 3  | <input type="checkbox"/> b) 7 |
| <input type="checkbox"/> c) 12 | <input type="checkbox"/> d) 5 |

46. For this position vs time graph, where is the velocity slowest?



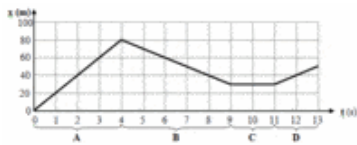
- |                               |                               |
|-------------------------------|-------------------------------|
| <input type="checkbox"/> a) A | <input type="checkbox"/> b) B |
| <input type="checkbox"/> c) C | <input type="checkbox"/> d) D |

47. For this position vs time graph, during which time interval(s) is the object moving in a positive direction?



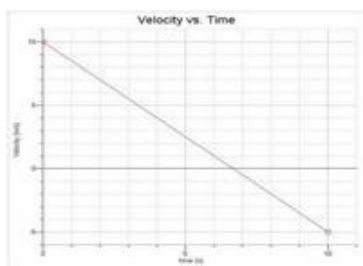
- |                                     |                               |
|-------------------------------------|-------------------------------|
| <input type="checkbox"/> a) A       | <input type="checkbox"/> b) B |
| <input type="checkbox"/> c) C       | <input type="checkbox"/> d) D |
| <input type="checkbox"/> e) A and D |                               |

48. For this position vs time graph, what is the object's displacement during interval B?



- |                                  |                                  |
|----------------------------------|----------------------------------|
| <input type="checkbox"/> a) 50m  | <input type="checkbox"/> b) -50m |
| <input type="checkbox"/> c) 400m | <input type="checkbox"/> d) 275m |

49. What is the specific equation for this graph? (hint: start with  $y=mx+b$ )



- a)  $v = a \cdot t + v_i$ 
 b)  $v = -10 \text{ (m/s)} \cdot t + 10 \text{ (m)}$
- c)  $v = -1.5 \text{ (m/s)} \cdot t + 10 \text{ (m)}$ 
 d)  $v = -1.5 \text{ (m/s)} \cdot t + -5 \text{ (m)}$
50. A wheel falls off of an airplane (oops) that is flying at an altitude of 1000m. The wheel lands 1500m horizontally away from the plane. How much time was the wheel in the air?
- a) 17.8s
  b) 204s
- c) 14.3s
  d) 102s
51. A wheel falls off of an airplane (oops) that is flying at an altitude of 1000m. The wheel lands 1500m horizontally away from the plane. How fast was the plane flying when the wheel fell off?
- a) 2110m/s
  b) 105 m/s
- c) 46.2m/s
  d) 502.3m/s
52. At the same time and from the same height, a cannon ball is fired horizontally at 300 m/s and an identical cannon ball is dropped. Which one hits the ground first? Ignore air resistance.
- a) the fired cannon ball
  b) the dropped cannon ball
- c) cannot be determined
  d) they land at the same time

## Answer Key

- |       |       |
|-------|-------|
| 1. a  | 43. b |
| 2. b  | 44. b |
| 3. d  | 45. d |
| 4. c  | 46. c |
| 5. a  | 47. e |
| 6. c  | 48. b |
| 7. d  | 49. c |
| 8. a  | 50. c |
| 9. d  | 51. b |
| 10. b | 52. d |
| 11. a |       |
| 12. b |       |
| 13. c |       |
| 14. b |       |
| 15. b |       |
| 16. b |       |
| 17. b |       |
| 18. c |       |
| 19. a |       |
| 20. b |       |
| 21. b |       |
| 22. a |       |
| 23. a |       |
| 24. c |       |
| 25. b |       |
| 26. d |       |
| 27. a |       |
| 28. b |       |
| 29. a |       |
| 30. a |       |
| 31. b |       |
| 32. c |       |
| 33. b |       |
| 34. b |       |
| 35. c |       |
| 36. c |       |
| 37. d |       |
| 38. a |       |
| 39. c |       |
| 40. d |       |
| 41. b |       |
| 42. b |       |