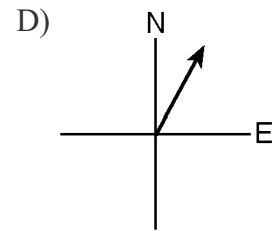
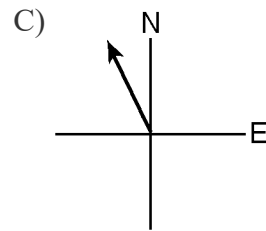
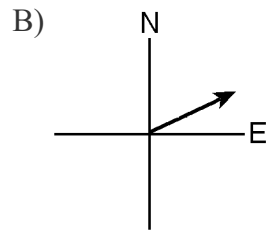
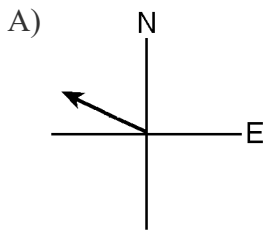


- 1) A student drops an object from the top of a building which is 19.6 meters from the ground. How long does it take the object to fall to the ground?
- A) 3.00 seconds B) 4.00 seconds C) 2.00 seconds D) 19.6 seconds
- 2) A stone is dropped from a bridge 45 meters above the surface of a river. Approximately how many seconds does the stone take to reach the water's surface?
- A) 1.0 s B) 3.0 s C) 22 s D) 10. s
- 3) In an experiment that measures how fast a student reacts, a meter stick dropped from rest falls 0.20 meter before the student catches it. The reaction time of the student is approximately
- A) 0.40 s B) 0.20 s C) 0.30 s D) 0.10 s
- 4) A book is pushed with an initial horizontal velocity of 5.0 meters per second off the top of a desk. What is the initial vertical velocity of the book?
- A) 2.5 m/s B) 5.0 m/s C) 0 m/s D) 10. m/s
- 5) An object starts from rest and falls freely. What is the velocity of the object at the end of 3.00 seconds?
- A) 29.4 m/s B) 88.2 m/s C) 19.6 m/s D) 9.81 m/s
- 6) An object falls freely from rest near the surface of the Earth. What is the speed of the object when it has fallen 4.9 meters from its rest position?
- A) 9.8 m/s B) 96 m/s C) 4.9 m/s D) 24 m/s
- 7) An object near the surface of planet X falls freely from rest and reaches a speed of 12.0 meters per second after it has fallen 14.4 meters. What is the acceleration due to gravity on planet X ?
- A) 5.00 m/s^2 B) 2.50 m/s^2 C) 10.0 m/s^2 D) 9.80 m/s^2
- 8) A freely falling object near the Earth's surface has a constant
- A) velocity of 9.81 m/s C) acceleration of 1.00 m/s^2
B) acceleration of 9.81 m/s^2 D) velocity of 1.00 m/s
- 9) An object is allowed to fall freely near the surface of a planet. The object falls 54 meters in the first 3.0 seconds after it is released. The acceleration due to gravity on that planet is
- A) 12 m/s^2 B) 108 m/s^2 C) 6.0 m/s^2 D) 27 m/s^2
- 10) A 4.0-kilogram rock and a 1.0-kilogram stone fall freely from rest from a height of 100. meters. After they fall for 2.0 seconds, the ratio of the rock's speed to the stone's speed is
- A) 1:2 B) 1:1 C) 4:1 D) 2:1

- 11) A ball is fired with a velocity of 12 meters per second from a cannon pointing north, while the cannon is moving eastward at a velocity of 24 meters per second. Which vector *best* represents the resultant velocity of the ball as it leaves the cannon?



- 12) A ball is thrown horizontally at a speed of 20. meters per second from the top of a cliff. How long does the ball take to fall 19.6 meters to the ground?

A) 4.0 s

B) 1.0 s

C) 9.8 s

D) 2.0 s

- 13) A rock is thrown horizontally from the top of a cliff at 12 meters per second. Approximately how long does it take the rock to fall 45 meters vertically? [Assume negligible air resistance.]

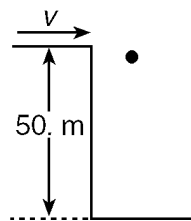
A) 1.0 sec

B) 3.0 sec

C) 5.0 sec

D) 8.0 sec

- 14) A ball is projected horizontally to the right from a height of 50. meters, as shown in the diagram below.



Which diagram *best* represents the position of the ball at 1.0-second intervals? [Neglect air resistance.]

