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## QUESTION 1



Which of the following statement is true if you throw two identical balls horizontally with the same force, one on Earth and one on the Moon?



- ☐ Both balls will accelerate at the same rate.
- ☐ Both balls will not accelerate vertically.
- ☒ The ball on the Earth will accelerate more than the one on the Moon. 
- ☐ The ball on the Moon will accelerate more than the one on the Earth.

## QUESTION 2



Which of the following statements is correct?

- ☐ Projectiles have constant vertical velocity.

☐ Projectiles accelerate horizontally and vertically at the same rate.

☒ Projectiles accelerate vertically only. ✓

☐ Projectiles follow a straight downward path.

### QUESTION 3



You throw two identical red and yellow balls, at the same time with the same vertical force. The red ball is thrown straight up and the yellow ball upward at an angle. While neglecting air resistance, what will happen to the two balls?

☐ The red ball will accelerate more than the yellow ball.

☐ The yellow ball will reach the ground before the red ball.

☒ Both balls will cover the same vertical distance in the same time interval. ✓

☐ The red ball will reach the ground before the yellow ball.

### QUESTION 4



Sultan is standing on a top of a cliff with two identical balls, **A** and **B**.

He throws ball **A** in the horizontal direction with an initial horizontal velocity. He drops ball **B** at the same time so it has no initial velocity.

Which statement is true?



Ball **B** will reach the bottom of the cliff before ball **A**.



Both ball **A** and **B** will reach the bottom of the cliff at the same time.



Ball **A** will reach the bottom of the cliff before ball **B**.



Ball **B** will reach the bottom of the cliff while ball **A** will not.

### QUESTION 5



During projectile motion, the horizontal velocity is independent of   the vertical velocity.

### QUESTION 6



Which of the following statements is true about a projectile's acceleration?



A projectile has zero horizontal acceleration so it only accelerates vertically.



A projectile accelerates more horizontally than vertically.

☐ A projectile accelerates at the same rate horizontally and vertically.

☐ A projectile only accelerates horizontally because it travels horizontally.

### QUESTION 7



A **projectile** ✓ ▼ is any object that is launched into the air with an initial velocity and moves in the air only under the influence of gravity.

### QUESTION 8



During a projectile's motion, the horizontal component of velocity

**remains the same** ✓ ▼ .

### QUESTION 9



The parabolic path of a projectile is called a **trajectory** ✓ ▼ .

## QUESTION 10



A plane traveling horizontally drops a package. The pilot looks out of the window and watches the package fall. From the pilot's view, which of the following statements is true?

☐ The package is horizontally accelerating.

☐ The package is not moving at all.

☒ The package is falling directly below the plane.



☐ The package is falling behind the plane.

## QUESTION 11



Which of the following is an example of projectile motion?

☐ A roller coaster moving in a loop.

☐ A bike going around a corner.

☐ An airplane moving in a curved path in the sky.

☒ A volleyball thrown into the air.



## QUESTION 12



A **projectile** ✓ ▼ is an object thrown into the air with an initial velocity. It follows a curved path due to the force of gravity.

## QUESTION 13



If you throw a ball up, the velocity of the ball

**decreases** ✓ ▼ until it reaches its

maximum height, then

**increases** ✓ ▼ again on the way

down. Assume that up is positive.



## QUESTION 14



What happens during the projectile motion of an object thrown horizontally in the air?

The object will follow a curved downward path. ✓

☐

The object will first move upward.

☐

The object will move in a straight horizontal line.

☐

The object will fall downward with constant velocity.