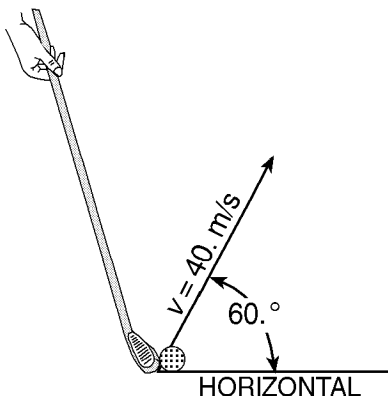


Name: _____
 Chapter 3 Projectile Motion (angle release) Summary/pre-quiz
 Part I Multiple Choice

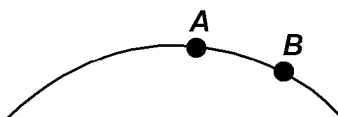
- 1) The diagram below shows a golf ball being struck by a club. The ball leaves the club with a speed of 40. meters per second at an angle of $60.^\circ$ with the horizontal.



If the ball strikes the ground 7.1 seconds later, how far from the golfer does the ball land? [Assume level ground and neglect air resistance.]

- A) 280 m B) 35 m C) 140 m D) 71 m
- 2) An archer uses a bow to fire two similar arrows with the same string force. One arrow is fired at an angle of $60.^\circ$ with the horizontal, and the other is fired at an angle of $45.^\circ$ with the horizontal. Compared to the arrow fired at $60.^\circ$, the arrow fired at $45.^\circ$ has a
- A) longer flight time and longer horizontal range C) shorter flight time and shorter horizontal range
 B) shorter flight time and longer horizontal range D) longer flight time and shorter horizontal range

- 3) The diagram below represents the path of an object after it was thrown.



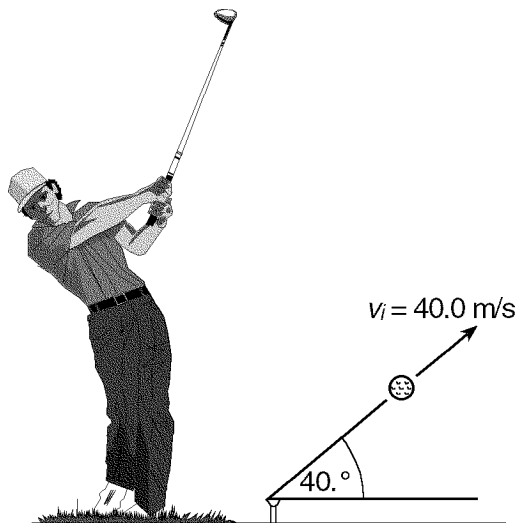
What happens to the object's acceleration as it travels from A to B? [Neglect friction.]

- A) It decreases. B) It increases. C) It remains the same.
- 4) A golf ball is propelled with an initial velocity of 60. meters per second at 37° above the horizontal. The horizontal component of the golf ball's initial velocity is
- A) 30. m/s B) 40. m/s C) 48 m/s D) 36 m/s

- 5) A projectile is launched with an initial velocity of 200 meters per second at an angle of 30° above the horizontal. What is the magnitude of the vertical component of the projectile's initial velocity?
- A) $\frac{200 \text{ m/s}}{\cos 30^\circ}$ B) $\frac{200 \text{ m/s}}{\sin 30^\circ}$ C) $200 \text{ m/s} \times \sin 30^\circ$ D) $200 \text{ m/s} \times \cos 30^\circ$

Questions 6 and 7 refer to the following:

A golf ball leaves a golf club with an initial velocity of 40.0 meters per second at an angle of $40.^\circ$ with the horizontal.



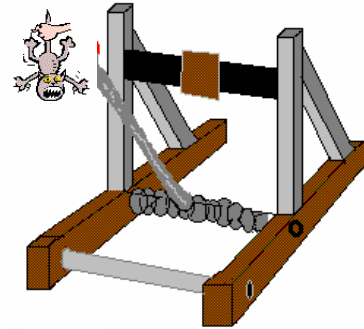
- 6) What is the total horizontal distance traveled by the golf ball during the first 2.50 seconds of its flight?
- A) 76.6 m B) 40.0 m C) 100. m D) 64.3 m
- 7) What is the vertical component of the golf ball's initial velocity?
- A) 25.7 m/s B) 61.3 m/s C) 30.6 m/s D) 40.0 m/s

Part II

Directions: Answer the following questions showing all work. You will be graded for each question according to the following rubrik.

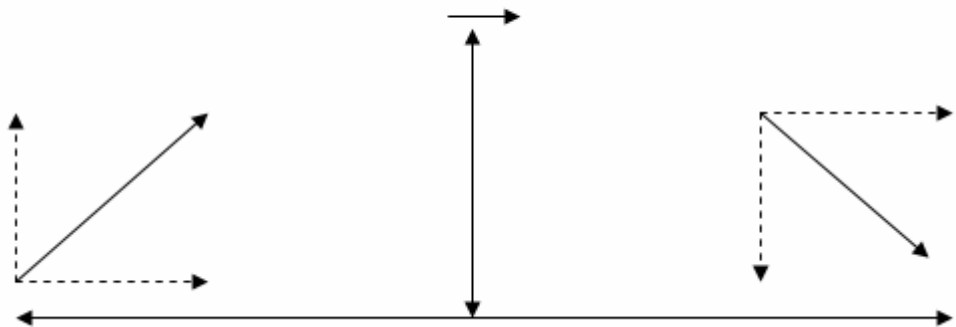
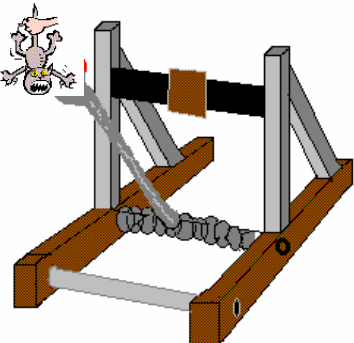
- 1 pt – Writing Correct Equation
- 1 pt – Plugging Numbers into equation
- 1 pt – Inclusion of Units on all numbers
- 2 pts – Correct Final Answer

5 pts total per question



1. Medieval Splat was convicted of betraying the King by peeing on the King's bed. He was sentenced to death by catapult over the kingdom wall and into never, never land. **Splat's initial launch velocity was 45 m/s at an angle of 37 degrees.**

(a) Complete the diagram below labeling all vectors



(b) If the wall was 10 m high, did Splat make it over the wall (find Splat's max vertical height)

(c) If the king began eating a turkey sandwich at the moment Splat was catapulted, how long would he have been eating the sandwich when Splat hits the ground?

(d) If never, never land was 200 meters away, did splat make it or did he drown in the moat?