Physics 1A–a
Quiz # 1 Oct. 12, 2007
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MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) A rock is thrown straight down with an initial velocity of 14.5 m/s from a cliff. What is the rock's displacement after 2.0 s? (Acceleration due to gravity is 9.80 m/s^2.)
A) 28 m B) 49 m C) 55 m D) 64 m E) 72 m

2) A high fountain of water is in the center of a circular pool of water. You walk the circumference of the pool and measure it to be 150 meters. You then stand at the edge of the pool and use a protractor to gauge the angle of elevation of the top of the fountain. It is 55^o . How high is the fountain?
A) 17 m B) 20 m C) 23 m D) 29 m E) 34 m

3) A cheetah can run approximately 100 km/hr and a gazelle at 80 km/hr. If both animals are running at full speed, with the gazelle 70 m ahead, how long before the cheetah hits its prey?
A) 25.2 s B) 12.6 s C) 6.3 s D) 10.7 s

4) A 50g ball traveling at 25.0 m/s is bounced off a brick wall and rebounds at 22.0 m/s. A highspeed camera records this event. If the ball is in contact with the wall for 3.50 ms, what is the average acceleration of the ball during this time interval?
A) 13,400 m/s^2 B) 6,720 m/s^2 C) 3,360 m/s^2 D) 857 m/s^2 E) 20 m/s^2

5) Changing the positive direction in a reference frame to the opposite direction does not change the sign of which of the following quantities:
A) velocity B) average velocity C) speed D) displacement

6) A bird, accelerating from rest at a constant rate, experiences a displacement of 28 m in 11 s. What is its acceleration?
A) 0.21 m/s^2 B) 0.46 m/s^2 C) 0.64 m/s^2 D) 0.78 m/s^2 E) 0.86 m/s^2

7) A Cessna aircraft has a liftoff speed of 120 km/hr. What minimum constant acceleration does this require if the aircraft is to be airborne after a takeoff run of 240 m?
A) 2.31 m/s^2 B) 3.63 m/s^2 C) 4.63 m/s^2 D) 5.55 m/s^2 E) 7.26 m/s^2

8) A train moves forward at a constant speed of 15.0 m/s for 10.0 min, and then accelerates at a constant rate for 8.00 min, eventually reaching a final forward speed of 25.0 m/s. Which one of the following choices best describes how far the train traveled during this entire 18.0 min process?
A) 2.70 . 10^4 m. B) 1.86 . 10^4 m. C) 1.62 . 10^4 m. D) 9.69 . 10^4 m. E) 9.00 . 10^4 m.

Answer Key
Testname: QUIZ1AA.TST

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) B
2) E
3) B
4) A
5) C
6) B
7) A
8) B