Physics 1A–b
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 right triangle has sides 5.0 m, 12 m, and 13 m. The smallest angle of this triangle is nearest:

   A) 15º   B) 20º   C) 23º   D) 30º   E) 43º

2) A rock is thrown straight up with an initial velocity of 24.5 m/s.What maximum height will the rock reach before starting to fall downward? (Take acceleration due to gravity as 9.80 m/s^2.)

   A) 9.8 m   B) 19.6 m   C) 24.5 m   D) 30.6 m   E) 39.2 m

3) A water rocket, launched from the ground, rises vertically with acceleration of 30 m/s^2 for 1.0 s when it runs out of "fuel". Disregarding air resistance, how high will the rocket rise?

   A) 15 m   B) 31 m   C) 61 m   D) 90 m   E) 120 m

4) A railroad train travels forward along a straight track at 80.0 m/s for 1 000 m and then travels at 50.0 m/s for the next 1 000 m. What is the average velocity?

   A) 65.0 m/s   B) 61.5 m/s   C) 63.7 m/s   D) 70.0 m/s   E) 72.3 m/s

5) The value of an object's acceleration may be characterized in equivalent words by which of the following?

   A) displacement   B) rate of change of displacement
   C) velocity   D) rate of change of velocity

6) A rock, released at rest from the top of a tower, hits the ground after 1.5 s. What is the speed of the rock as it hits the ground? (g = 9.8 m/s^2 and air resistance is negligible)

   A) 15 m/s   B) 20 m/s   C) 31 m/s   D) 39 m/s   E) 45 m/s

7) An automobile driver puts on the brakes and uniformly decelerates from 30.0 m/s to zero in 10.0 s. What distance does the car travel in those 10.0 s?

   A) 100 m   B) 150 m   C) 200 m   D) 250 m   E) 300 m

8) A cheetah can maintain its maximum speed of 100 km/hr for 30.0 seconds. What minimum distance must a gazelle running 80.0 km/hr be ahead of the cheetah to escape?

   A) 100 m   B) 167 m   C) 70 m   D) 80 m   E) 130 m

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

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