Physics 231 - 8-Sep-99

- acceleration
- kinematic equations
- free fall
- examples
- quiz

acceleration

kinematic equations

- 1) $x = x_0 + v_0 t + 1/2\ a t^2$
- 2) $v = v_0 + a t$
- 3) $v_{av} = (v + v_0)/2$
- 4) $x = x_0 + v_{av} t$
- 5) $v^2 = v_0^2 + 2\ a\ (x - x_0)$

examples

free fall

- $a = -g$; $g = 9.8\ m/s^2$
- 1) $y = y_0 + v_0 t - 1/2\ g\ t^2$
- 2) $v = v_0 - gt$
- 3) $v_{av} = (v+v_0)/2$
- 4) $y = y_0 + v_{av}\ t$
- 5) $v^2 = v_0^2 - 2\ g(y - y_0)$

examples

Q1 - Answer = c
Q2 - Problem A - Last name A-K

- A ball is dropped from a height of 8 m. How long does it take to hit the ground? Use g = 9.8 m/s ^{2}.
  - a) 1.3 s
  - b) 1.6 s
  - c) 4.9 s
  - d) 8.9 s
  - e) 12.7 s

Q1 - Answer = c
Q2 - Problem B - Last Name L-Z

- A ball is dropped from a height of 12 m. How long does it take to hit the ground? Use g = 9.8 m/s ^{2}.
  - a) 1.3 s
  - b) 1.6 s
  - c) 3.1 s
  - d) 4.9 s
  - e) 7.2 s