Errors and Approximation

1. Find the approximate value of $f(2.05)$, where $f(x) = 2x^3 + 5x$
   a) 27.25 b) 27.45 c) 26.45 d) 27.65

2. Let $y = 3x^2 + 2$, if x changes from 10 to 10.1, then what is the total change in y
   a) 4.71 b) 5.23 c) 6.0 d) 8.01

3. If the radius of a sphere is measured as 4m with an error of 0.01m, then the approximate error in calculating its volume is
   a) $0.61\pi m^3$ b) $0.62\pi m^3$ c) $0.64\pi m^3$ c) $0.65\pi m^3$

4. Given the kinetic energy of body is T = ½ mv^2. If the mass of body changes from 100 kg to 100 kg and 500 gm and velocity of a body changes from 1600 m/sec to 1590 m/sec. Then find the approximate change in T.
   a) 960000 J decrease in value
   b) 960000 J increase in value
   c) 450000 J decrease in value
   d) 450000 J increase in value

5. Find the percentage change power in the circuit if error in value of resistor is 1% and that of voltage source is 0.99%.
   a) 0.98% b) 0.91% c) 0.95% d) 0.9%