Significant Figures

1) 6   5) 4   9) .62
2) 10   6) 6   10) 990.0
3) 3   7) 5.6×10^{14} 11) 555.
4) 12   8) 7.0   12) 8597

Speed, Velocity, Acceleration

1) $S = \dfrac{d}{t} = \dfrac{23.7}{54} = .4389$ m/s

   $V = \dfrac{x}{t} = \dfrac{27}{22} = 1.227$ m/s

2) $S = \dfrac{d}{t} = \dfrac{347}{134} = 2.5896$ m/s

   $V = \dfrac{x}{t} = \dfrac{200}{134} = 1.4493$ m/s

3) $S = \dfrac{d}{t} = \dfrac{11,200,000}{432,000} = 25.93$ m/s

   $V = \dfrac{x}{t} = \dfrac{3,200,000}{432,000} = 7.407$ m/s

4) $V_f^2 = V_o^2 + 2ax$

   $a = \dfrac{V_f^2 - V_o^2}{2x}$

   $\dfrac{0 - 32^2}{2(75.76m)} = 6.76$ m/s²

$\dfrac{72mi}{hr} \cdot \dfrac{1760yd}{1mi} \cdot \dfrac{3m}{1yd} \cdot \dfrac{1hr}{3600sec} = 32$ m/s

$2805t \cdot \dfrac{1yd}{3ft} \cdot \dfrac{3m}{3.3yd} = 75.76m$

Dimensional Analysis

1) $mv = F \cdot t$ units

   $F = m \cdot a$ $m = kg$

   $a = m/s^2$ $v = m/s$

   $= m \cdot a \cdot d$ $t = s$

   $kg \cdot \dfrac{m}{s} = kg \cdot \dfrac{m}{s^2} \cdot s$

   $kg \cdot m/s = kg \cdot m/s$

2) $H = mC\Delta T$ $m = kg$

   $H = F \cdot d$ $a = m/s^2$

   $= m \cdot a \cdot d$ $d = m$

      $T = K°$

   $\dfrac{H}{m\Delta T} = C$

   $\dfrac{kg \cdot \frac{m^2}{s^2}}{kg \cdot K°} = \dfrac{m^2}{s^2 \cdot K°}$

3) $P = KA\Delta T/\ell$ $K = W/m \cdot K°$

   $\omega = J/s$ $\ell = m$

   $J = N \cdot m$ $\Delta T = K°$

   $N = kg \cdot m/s^2$ $A = m^2$

   $P = \dfrac{kg \cdot m^2}{s^3} / m \cdot K° \cdot m^2 \cdot K° = \dfrac{\frac{kg \cdot m^2}{s^3} \cdot m^2 \cdot K°}{m} = \dfrac{kg \cdot m^2}{s^3 \cdot m} = \dfrac{kg \cdot m^2}{s^3}$

A)

$(3x - s)$

$(10 + 14)$

$(2x - 1)$

c)

$\sqrt{85}$

c)