

More Systems of Equations #2

Please do exercises on a separate sheet of paper and staple to this sheet.

Two Equations, Two Unknowns. Solve for the indicated variables.

1. a. Solve for x and t : (1) $x = v_s t$ (2) $x = \frac{1}{2} a_p t^2$.

b. Find x and t when $v_s = 30.0$ m/s and $a_p = 2.44$ m/s².

2. Solve for a and T : (1) $m_1 g - T = m_1 a$ (2) $T - \mu m_2 g = m_2 a$.

3. Solve for p and q : (1) $\frac{1}{p} + \frac{1}{q} = \frac{1}{f}$ (2) $2p - 2q = 3f$.

Three Equations, Three Unknowns. Solve for the indicated variables.

1. Solve for F , T_1 , and T_2 : (1) $F - T_1 = m_1 a$ (2) $T_1 - T_2 = m_2 a$ (3) $T_2 = m_3 a$.

2. Solve for I_1 , I_2 , and I_3 : (1) $I_3 = I_1 + I_2$ (2) $4I_1 - 4I_2 = 2$ (3) $4 = 4I_1 + 5I_3$.

3. Solve for a , α , and T_1 : (1) $m_1 g - T_1 = m_1 a$ (2) $RT_1 = I\alpha$ (3) $a = R\alpha$.