

1) a) $V_{OX} = 20 \text{ m/s}$ $Y = 6 \text{ metres}$ $g = 9.8 \text{ m/s}^2$

$$X = V_{OX}t + \frac{\sqrt{(2Y)}}{g}$$

$$X = 20 \text{ m/s} \times 1.1 \text{ seg} \quad t = \sqrt{\frac{(2)(6 \text{ m})}{9.8 \text{ m/s}^2}}$$

$$X = 22.2 \text{ m/s}$$

$$t = \sqrt{1.22 \text{ seg}^2}$$

$$t = 1.1 \text{ seg}$$

2) $Y = 100 \text{ m}$ $X = 80 \text{ m/s}$ $g = 9.8 \text{ m/s}^2$

$$V_{OX} = \frac{X}{t}$$

$$t = \sqrt{\frac{(2Y)}{g}}$$

$$V_{OX} = \frac{80 \text{ m/s}}{4.52 \text{ seg}}$$

$$t = \sqrt{\frac{(2)(100 \text{ m})}{9.8 \text{ m/s}^2}}$$

$$V_{OX} = 17.70 \text{ m/s} \quad t = \sqrt{20.40 \text{ seg}^2}$$

$$t = 4.52 \text{ seg}$$

$$3) \quad v_{0x} = 5.5 \text{ m/s} \quad Y = 2 \text{ m/s} \quad g = 9.8 \text{ m/s}^2$$

$$X = v_{0x} t \quad t = \frac{\sqrt{2Y}}{g}$$

$$X = 5.5 \text{ m/s} \times 0.65 \text{ seg} \quad t = \frac{(2)(2 \text{ m/s})}{9.8 \text{ m/s}^2}$$

$$t = 0.405$$

$$t = 0.63 \text{ seg}^2$$

$$4) \quad v_{0x} = 7.8 \text{ m/s} \quad t = 3 \text{ seg} \quad g = 9.80 \text{ m/s}^2$$

$$a) \quad Y = \frac{gt^2}{2}$$

$$Y = 9.8 \text{ m/s}^2 (3 \text{ seg})^2$$

$$Y = \frac{88.2 \text{ m/s}}{2}$$

$$Y = 44.1 \text{ m/s}$$

$$b) \quad X = v_{0x} t$$

$$X = 7.8 \text{ m/s} \times 3 \text{ seg}$$

$$X = 5.4 \text{ m/s}$$

$$5) \quad V_{OX} = 26 \text{ cm/s} \quad Y = 72 \text{ cm} \quad g = 980 \text{ cm/s}^2$$

$$X = V_{OX} t$$

$$t = \sqrt{\frac{2Y}{g}}$$

$$X = 26 \text{ cm/s} \times 0.38 \text{ sec}$$

$$t = \sqrt{\frac{(2)(72 \text{ cm})}{980 \text{ cm/s}^2}}$$

$$X = 9.88 \text{ cm}$$

$$9.8 = \frac{100}{1M} = \frac{980}{1M} = 980 \text{ cm/s}^2 \quad t = \sqrt{0.15 \text{ sec}^2}$$

$$t = 0.38 \text{ sec}$$