HW: Lina Ghanim

Problem 12:

$$a = \underbrace{e}_{\text{engine}} \times \underbrace{f(t)}_{\text{fuel rate}} - g$$

$$\int_0^T a(t)\,dt = e\left[\int_0^{T\ \text{when it lands}} f(t)\,dt\right] - gt = v(t) = 0$$

fuel we need to land? amount of fuel

$$[\ \downarrow\ ] = \frac{gT}{e}$$

less time → less fuel usage. → don't use fuel.

Problem 13: no fuel will be used.

Problem 7:

If we plug in $a = v_0^2/2h$ in the equation:

$$v_f^2 = v_0^2 + 2ah$$
$$v_f^2 = v_0^2 + 2\times-(v_0^2/2h)\times h$$
$$v_f^2 = v_0^2 - v_0^2$$
$$v_f = 0$$

Rest of Problems are in DrRacket file.