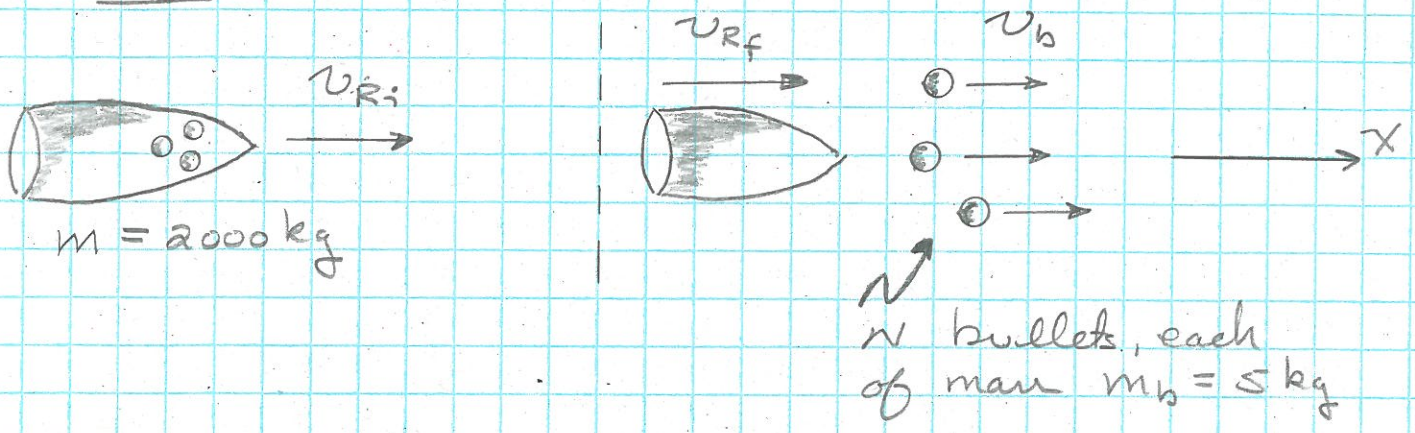

$$v_{R_i} = 25{,}000 \text{ km/h} \left(\frac{1000\text{ m}}{1\text{ km}}\right)\left(\frac{1\text{ h}}{3600\text{ s}}\right) = 6944 \text{ m/s}$$

$$v_{R_f} = 15{,}000 \text{ km/h} = 4167 \text{ m/s}$$

$v_b' = 139{,}000$ m/s relative to rocket

So: $v_b = 139{,}000 \text{ m/s} + 6944 \text{ m/s} = 145{,}900 \text{ m/s}$

Conserve x-comp. of momentum $i \to f$:

$$P_{ix} = P_{fx}$$

$$m v_{R_i} = (m - N m_b) v_{R_f} + N m_b v_b$$

$$= m v_{R_f} - N m_b v_{R_f} + N m_b v_b$$

$$m(v_{R_i} - v_{R_f}) = N m_b (v_b - v_{R_f})$$

so $$N = \frac{m(v_{R_i} - v_{R_f})}{m_b (v_b - v_{R_f})} = 7.84$$

7 bullets would not slow the rocket enough — so the answer is 8