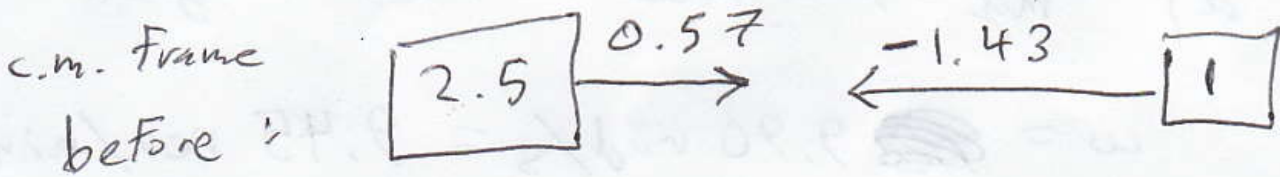


4/13

5. [25 points] A 1.0 kg mass and 2.5 kg mass are traveling directly towards each other at equal speeds of 1.0 m/s.

If they collide head-on without converting any kinetic energy to other forms of energy, then what will be the speed of the 2.5 kg mass after the collision?

$$p_1 + p_2 = p = 1.5 \text{ kg m/s} \quad v_{cm} = \frac{p}{m_1 + m_2} = 0.43 \text{ m/s}$$



Answer: 0.14 m/s

P.S. In a ~~an~~ completely inelastic collision, you instead use:

