

(3)

#6

$$M_1 = 2T$$
$$V_1 = 0.3 \text{ m/s}$$

$$M_1 V_1 = -M_2 V_2$$

$$M_2 = 1T$$
$$V_2 = ?$$

$$V_2 = \frac{M_1 V_1}{-M_2}$$

$$= \frac{(2T)(0.3 \text{ m/s})}{(-1T)}$$

$$= \boxed{-0.6 \text{ m/s}}$$

#7

$$M_B = 56 \text{ kg}$$

$$M_H = 130 \text{ kg}$$

$$V_{B1} = 21 \text{ m/s}$$

$$V_{H1} = 0 \text{ m/s}$$

$$M_1 V_1 + M_2 V_2 = M_1 V_1' + M_2 V_2'$$

$$\text{so } V_2' = \frac{M_1 V_1}{M_2} - \frac{(56 \text{ kg})(21 \text{ m/s})}{130 \text{ kg}}$$

$$= \boxed{9.05 \text{ m/s}}$$