Determine the momentum for:

a.) proton of mass 1.67x10^-27 kg moving at 5x10^6 m/s?

b.) bullet of mass .015 kg moving at 300 m/s?

c.) sprinter of mass 75 kg moving at 10 m/s?

d.) earth of mass 5.98x10^24 kg moving at 2.98x10^4 m/s?

a.) momentum of proton of mass 1.67x10^-27 kg moving at 5x10^6 m/s?

$$p_{electron} = mv$$
$$= \left(1.67 \text{x} 10^{-27} \text{ kg}\right)\left(5 \text{x} 10^{6} \text{ m/s}\right)$$
$$= 8.35 \text{x} 10^{-21} \text{ kg} \bullet \text{m/s}$$

b.) bullet of mass .015 kg moving at 300 m/s?

$$p_{bullet} = mv$$
$$= \left(.015 \text{ kg}\right)\left(300 \text{ m/s}\right)$$
$$= 4.5 \text{ kg} \bullet \text{m/s}$$

c.) sprinter of mass 75 kg moving at 10 m/s?

$$p = mv$$
$$= (75 \text{ kg})(10 \text{ m/s})$$
$$= 750 \text{ kg} \cdot \text{m/s}$$

d.) earth of mass 5.98x10^24 kg moving at 2.98x10^4 m/s?

$$p_{electron} = mv$$
$$= (5.98\text{x}10^{24} \text{ kg})(2.98\text{x}10^{4} \text{ m/s})$$
$$= 1.78\text{x}10^{29} \text{ kg} \cdot \text{m/s}$$