

Physics
Quiz # 12

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Q1.

(b)

Q2.

(b)

Q3.

(a)

$$F_x = 5 \times \frac{4}{5} = 4N$$

$$\Delta p = F\Delta t$$

$$= 4 \times 3$$

$$= 12N/s$$

(b)

$$F_x = 5 \times \cos 30 = 4.33N$$

$$\Delta p = F\Delta t$$

$$= 4.33 \times 3$$

$$= 12.99N/s$$

(c)

$$\Delta p = F\Delta t$$

$$= 20 \times 1 \times \frac{1}{2}$$

$$= 10N/s$$

$$\Delta p = F\Delta t$$

$$= 20 \times 2$$

$$= 40N/s$$

$$\Delta p = 40 + 10 = 50N/s$$

Q4.

(b)

$$\begin{aligned} p &= mv \\ &= 10 \times 6 = 60 \text{ kg} \cdot \text{m/s} \end{aligned}$$

(b)

$$\begin{aligned} p &= mv \\ &= 10 \times 2 = 20 \text{ kg} \cdot \text{m/s} \end{aligned}$$

(c)

$$\begin{aligned} p &= mv \\ &= 10 \times 3 = 30 \text{ kg} \cdot \text{m/s} \end{aligned}$$

Q5.

$$(v_y)_1 = 25 \times \cos 45 = 17.68 \text{ m/s}$$

$$\begin{aligned} p &= mv \\ &= 17.68 \times 0.5 = 8.84 \text{ kg} \cdot \text{m/s} \end{aligned}$$

$$(v_y)_2 = 10 \times \sin 30 = 5 \text{ m/s}$$

$$\begin{aligned} p &= mv \\ &= 5 \times 0.5 = 2.5 \text{ kg} \cdot \text{m/s} \end{aligned}$$

$$\Delta p = 2.5 - 8.84 = -6.34 \text{ kg} \cdot \text{m/s}$$