

## Section 4.3: Notes and Examples.

### Newton's 3<sup>rd</sup> Law

$$F_{A \text{ on } B} = -F_{B \text{ on } A}$$

### Practice Problems (p. 104)

#28  $B \Rightarrow$  ball    $\text{Hand} \Rightarrow H$     $\text{Air} \Rightarrow A$     $E \Rightarrow$  Earth

- Forces on ball:  $F_{H \text{ on } B}$ ,  $F_{A \text{ on } B}$ ,  $F_{E \text{ on } B}$
- Forces ball exerts:  $F_{B \text{ on } H}$ ,  $F_{B \text{ on } A}$ ,  $F_{B \text{ on } E}$
- Objects forces exerted on:  $\leftarrow$

#29

Forces acting on brick:  $F_{\text{Earth on brick}}$

Forces exerted by brick:  $F_{\text{brick on Earth}}$

objects exerting forces: brick, Earth, ~~air~~ ignore

#30



$$F_{\text{Earth on brick}} = -F_{\text{brick on Earth}}$$

L  
9

#92

Given:

$$T = 450 \text{ N}$$

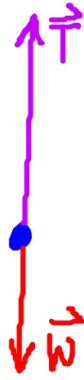
~~T or F<sub>net</sub> = ?~~

$$m = 42 \text{ kg}$$

$$W = mg$$

$$= (42 \text{ kg})(9.8 \frac{\text{m}}{\text{s}^2})$$

=



$$\Sigma F = F_{\text{net}} \quad F_{\text{net}} = ma$$

$$\uparrow F_{\text{net}} = \Sigma F = T - W$$

$$\cancel{ma} = \frac{T - W}{m}$$

$$a = \frac{T - W}{m}$$

$$a = \frac{450 \text{ N} - (42 \text{ kg})(9.8 \frac{\text{m}}{\text{s}^2})}{(42 \text{ kg})}$$

$$a = 0.914 \frac{\text{m}}{\text{s}^2}$$

$$= .91 \frac{\text{m}}{\text{s}^2}$$