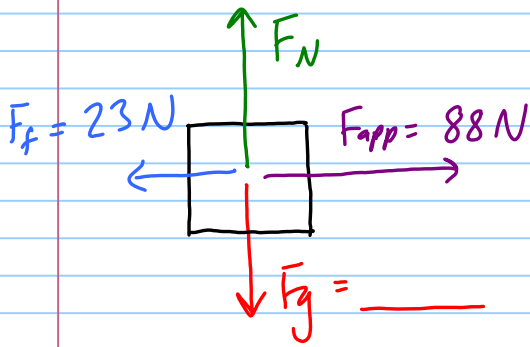
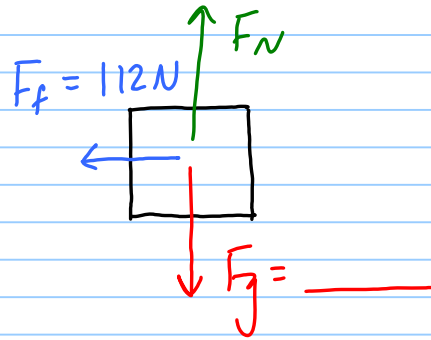


Quiz 3c

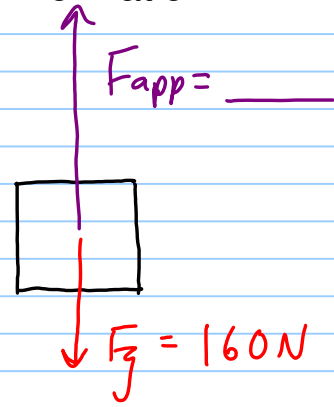
For each of the situations shown below, determine the missing information.



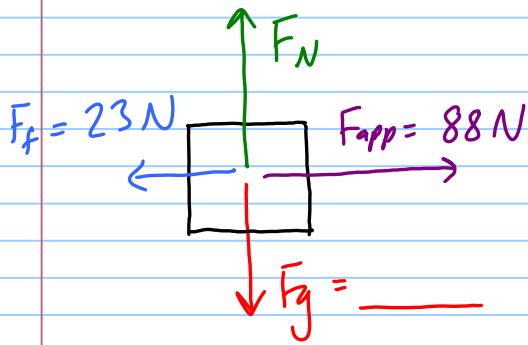
$$m = \underline{\hspace{2cm}}$$
$$a = 5.0\text{ m/s}^2$$



$$m = 15\text{ kg}$$
$$a = \underline{\hspace{2cm}}$$



$$m = 16.3\text{ kg}$$
$$a = 22\text{ m/s}^2$$



$$m = \underline{\hspace{2cm}}$$

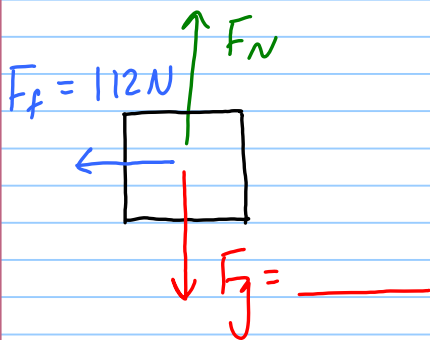
$$a = 5.0\text{ m/s}^2$$

$$F_{net} = F_{app} - F_f = ma$$

$$m = \frac{F_{app} - F_f}{a}$$

$$= \frac{(88 - 23)\text{ N}}{5.0\text{ m/s}^2} = \boxed{13\text{ kg}} \checkmark$$

$$F_g = mg = (13\text{ kg})(9.8\text{ m/s}^2) = \boxed{130\text{ N}} \checkmark$$



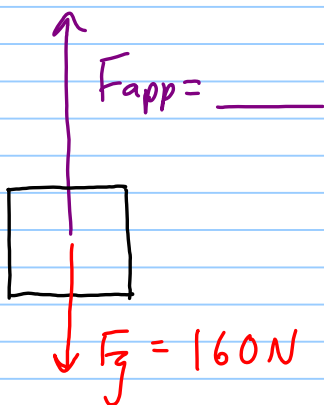
$$m = 15\text{ kg}$$

$$a = \underline{\hspace{2cm}}$$

$$F_g = mg = (15\text{ kg})(9.8\text{ m/s}^2) = \boxed{150\text{ N}} \checkmark$$

$$F_{net} = -F_f = ma$$

$$a = \frac{-F_f}{m} = \frac{-112\text{ N}}{15\text{ kg}} = \boxed{7.5\text{ m/s}^2} \checkmark$$



$$m = 16.3\text{ kg}$$

$$a = 22\text{ m/s}^2$$

$$F_{net} = F_{app} - F_g = ma$$

$$F_{app} = F_g + ma$$

$$= 160\text{ N} + (16.3\text{ kg})(22\text{ m/s}^2)$$

$$= \boxed{520\text{ N}} \checkmark$$