

$$\frac{1}{2} k \Delta x = U_k$$

$$k = \frac{2U_k}{\Delta x}$$

$$F_{\text{spring}} = -kx$$

$$= \frac{2U_k}{\Delta x}$$

$$U_k = \frac{1}{2} k \Delta x^2 \quad F = kx \quad W =$$

$$W = U_k$$

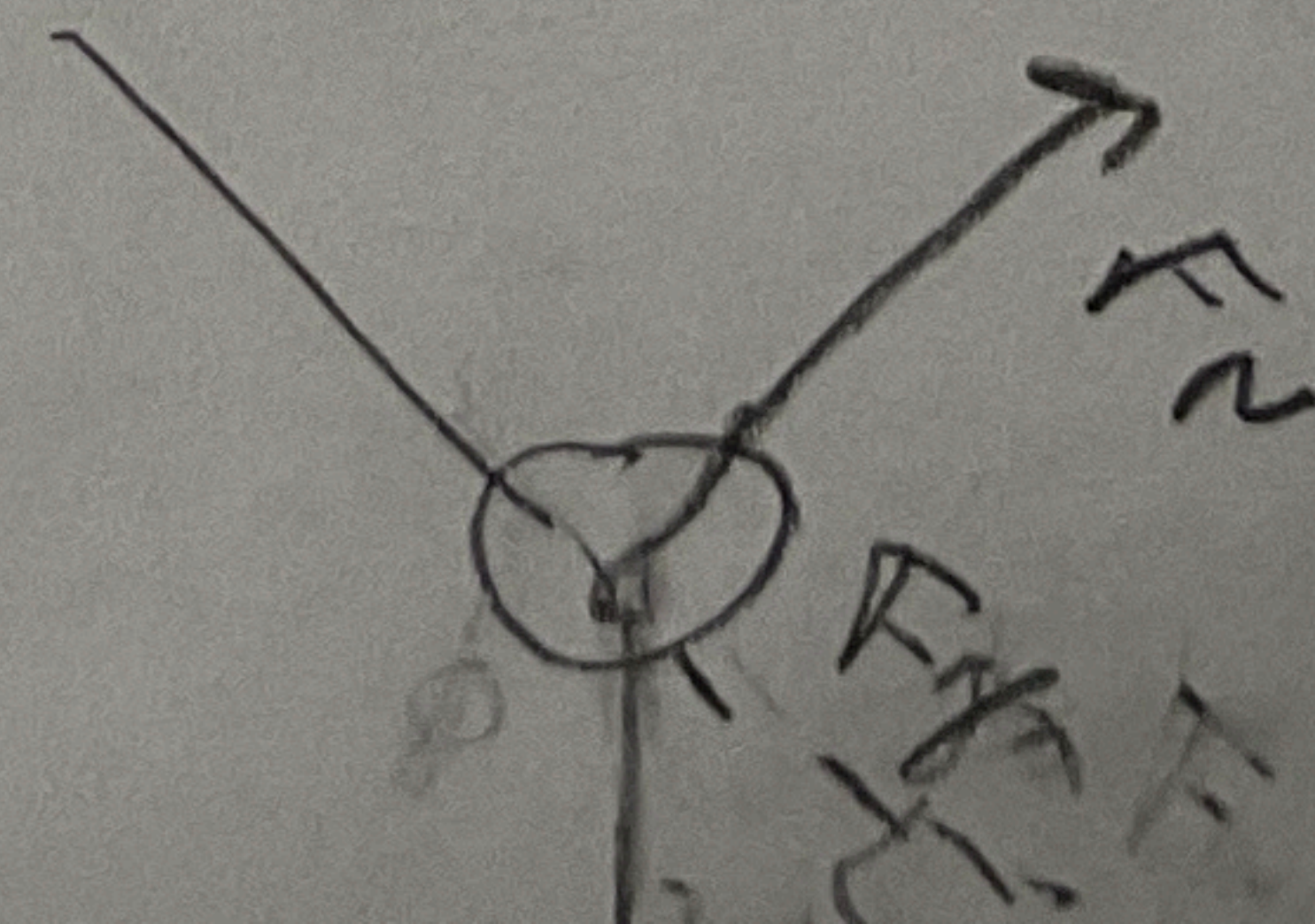
$$\frac{1}{2} k \Delta x^2 = F \cdot d_{\text{spring}}$$

$$\frac{1}{2} k \Delta x^2 = kx \cdot x$$

$$\frac{1}{2} \Delta x^2 = x^2$$

$$\sqrt{\frac{1}{2} \Delta x^2} = x$$

16.) w_i



$$\tau = r F \sin \theta \rightarrow \text{in center}$$