$$W = F_{x} \Delta x + F_{y} \Delta y + F_{z} \Delta z$$

$$= \overrightarrow{F} \cdot \Delta \overrightarrow{r} \cdot dot \ \rho \cdot roduct$$

$$\overrightarrow{A} \cdot \overrightarrow{B} = A_{x} B_{x} + A_{y} B_{y} + A_{z} B_{z}$$

$$\vec{A} \cdot \vec{B} = A_{x} B_{x} + A_{y} B_{y} + A_{z} B_{z}$$

$$= 3 \cdot -2 + 1 \cdot 0 + 5 \cdot 1$$

$$= 6 \cdot 2 \cdot -3 \cdot 3 \cdot 3$$

$$= 6 \cdot 2 \cdot -3 \cdot 3$$

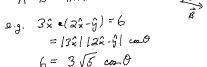
$$= 6 - 0 = 6$$

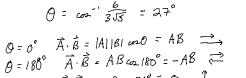
$$\vec{A} \cdot \vec{B} = |\vec{A}| |\vec{B}| \cos \theta \qquad \vec{A}$$

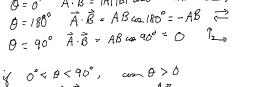
$$\vec{B} = |\vec{A}| |\vec{B}| \cos \theta \qquad \vec{B}$$

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$$\vec{A} \cdot \vec{B} > 0$$

Some-13h direction

 $90^{\circ} < \theta < 180^{\circ}$. Cos- $\theta < 0$
 $\vec{A} \cdot \vec{B} < 0$

opposite-sh direction

$$KE = \frac{1}{2}mv^{2}$$

$$PE_{g} = mgAy$$

$$PE_{s} = \frac{1}{2}k(\Delta L)^{2}$$

$$E_{f} = E_{i} + W$$

$$\lambda_{a} = \frac{1}{2}ms$$

$$\lambda_{b} = \frac{1}{2}ms$$

$$\lambda_{b} = \frac{1}{2}ms$$