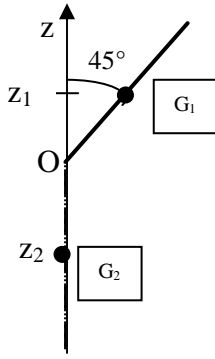


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### حل التمرين 11



$$W(\vec{P}) = mg(z_1 - z_2)$$

$$W(\vec{P}) = mg\left(\frac{L}{2} \cos \alpha - \left(-\frac{L}{2}\right)\right)$$

$$W(\vec{P}) = mg \frac{L}{2} (\cos \alpha + 1)$$

تطبيق عددي :

$$W(\vec{P}) = 200 \cdot 10^{-3} \times 9,8 \times \frac{50 \cdot 10^{-2}}{2} (\cos 45 + 1)$$

$$W(\vec{P}) = 0,83 J$$

Mohammed Sobhi