Answer on Question #37241

Physics – Mechanics | Kinematics | Dynamics

Question:

A force does +210 J of work when it acts on a moving object and its direction is in the same direction as the object's displacement. How much work does this force do when the angle between it and the object's displacement is 56°?

Solution:

$$A_1 = FS,$$

where $A_1 = 210\ J$, S is displacement. If we assume that the displacement in the second case is the same, the work equals

$$A_2 = FS \cos 56° = A_1 \cos 56° = 210\ \cos 56° = 117\ J$$

Answer:

117 J.