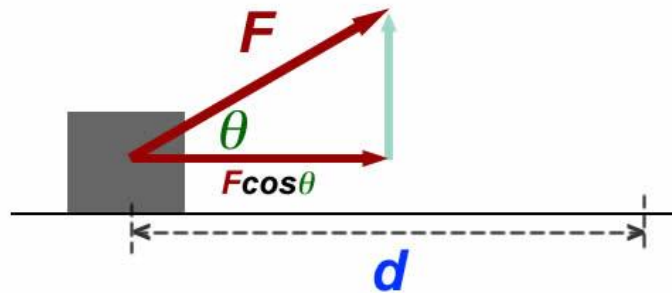A 40 kilogram mass is pulled by an 80 newton force which is 30 degrees from the horizontal along a level floor. What is the work done by the 80 newton force after travelling 15 meters?

Mathematically, work can be expressed by the following equation:

$$W = Fd \cos \theta$$

where F is the force, d is the displacement, and the angle θ is defined as the angle between the force and the displacement vector.

In this case $\theta = 30°$, therefore:

$$W = 80N * 15m * \cos 30° = 600\sqrt{3}\,J \approx 1040J$$

Answer: $W = 1040\,J$