

MITOCW | MIT8_01SCF10mod12_04_300k

In this course we will encounter dot products. We will largely encounter it when we deal with work. Work is a scalar. And you will see that the definition of work is the dot product between a force, which is a vector, and the displacement vector. We will get into that in more detail later. But since it is the dot product between two vectors, it shouldn't surprise you at all that sometimes the work done by a force can be positive if the angle between the force and the displacement vector is smaller than 90 degrees. It can be 0 if the force is exactly at right angles with respect to the displacement, then no work is done. But the work can also be negative if the angle between the force and the displacement vector is larger than 90 degrees. So be ready, be prepared emotionally for the fact that work can be negative. And you'll see many examples of that.