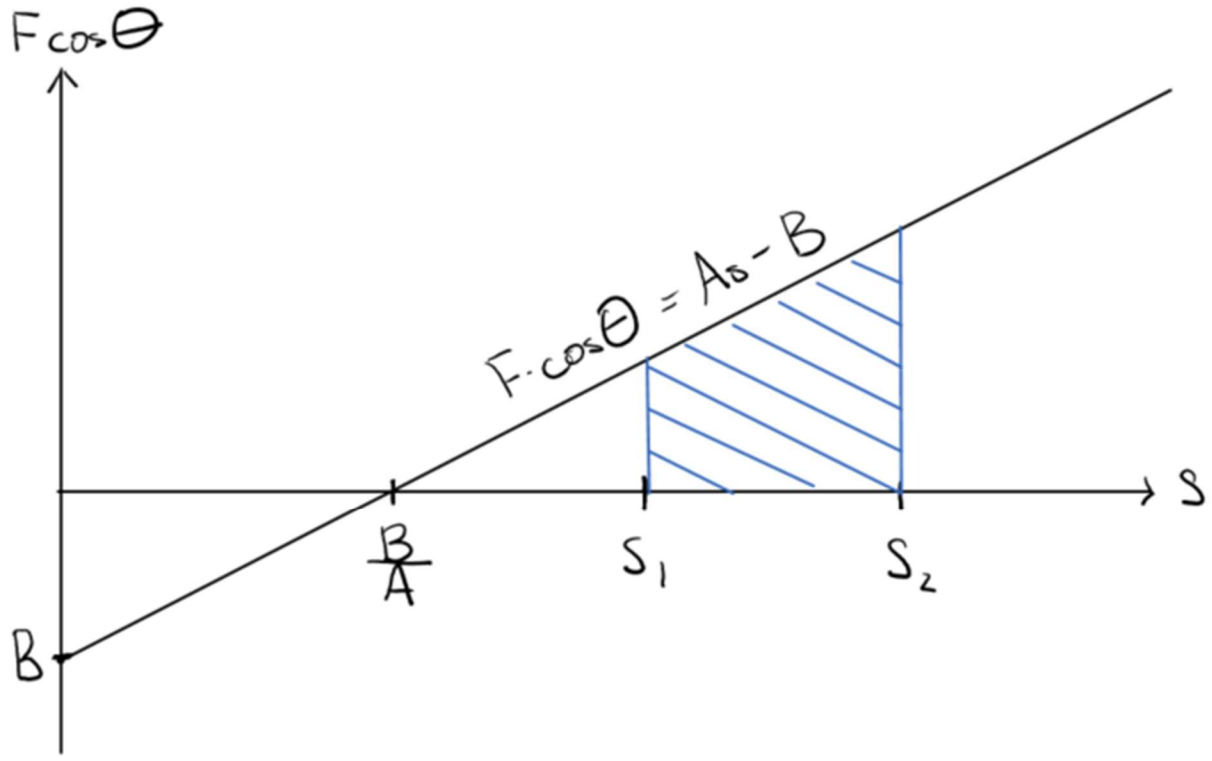
21-P-WE-AG-019

The equation of the line on an $F \cdot \cos(\theta)$ over *s* graph is $F \cdot \cos(\theta) = As - B$. This graph describes the effect of a variable force, *F*, on a particle moving through space. How much work does this variable force do on the particle between positions S_1 and S_2?

ANSWER:

The area under the curve of an $F \cdot \cos(\theta)$ over *s* graph is equal to the work done by F.



$$Area\ under\ curve = (S_2 - S_1)\left((A \cdot S_1 - B) + \left(\frac{A \cdot S_2 - A \cdot S_1}{2}\right)\right)$$