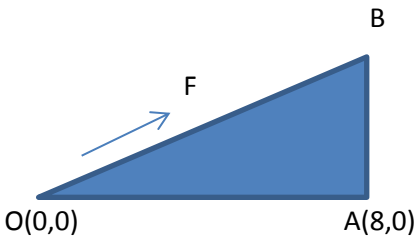
Answer to Question #88641 – Math – Trigonometry

Question

Find the work done by a force of 2 pounds acting in the direction of 35° to the hori zontal in moving an object 8 feet from (0, 0) to (8, 0).

Solution



Force F = 2 pounds

Force F is acting in the direction of OB in the above triangle OAB

Angle BOA = 35 degrees

Displacement is OA= 8 feet

Work done by a Force acting at an angle 35 degrees to the horizontal in moving an object from O to A is W= $F \times \cos\theta \times displacement$

=$2 \times \cos(35\ degrees) \times 8$

= $16 \times \cos(35\ degrees)$

= $16 \times (0.819152)$ (Since, $\cos(35\ degrees) = 0.819152$)

= 13.10643

Therefore, the work done by the force F, in moving the object from (0,0) to (8,0), is W= 13.10643 ergs