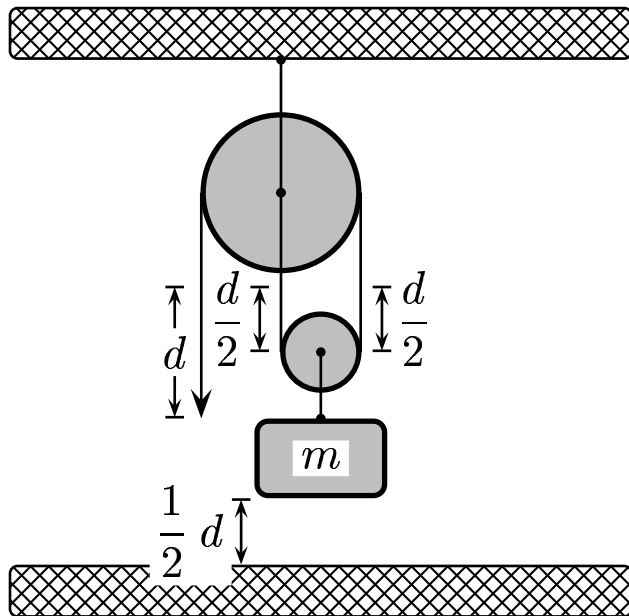


Consider the mass-pulley system shown.

Note: The figure *may not be drawn to scale.*

Determine the distance covered by the force F as it lifts the mass by a height Δx .

- A) $d = \Delta x$.
- B) $d = 2 \Delta x$.
- C) $d = 3 \Delta x$.
- D) $d = 4 \Delta x$.



Note: The figure *is drawn to scale.*

$\frac{d}{2}$ is the distance from the floor to the bottom of the block.

As the mass is being lifted by a height Δx , the length of each of the two strings supporting the moving pulley will be reduced by Δx so $d = 2 \Delta x$.

Answer **B**.