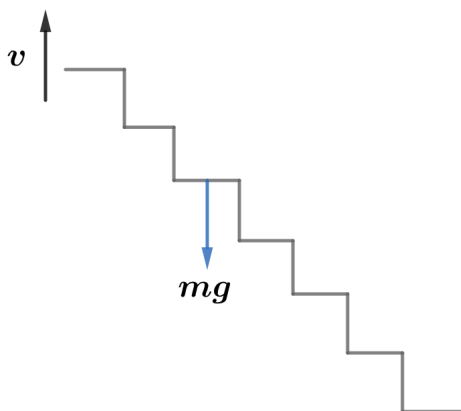


2020B F=ma Exam: Problem 11

Kevin S. Huang



The child applies his weight $-mg$ through a distance of $d = vt$ so the total work the child performs on the escalator is

$$W = -mgvt = -(50 \text{ kg})(10 \text{ N/m}) \left(\frac{10 \text{ m}}{30 \text{ s}} \right) (30 \text{ s}) = -5000 \text{ J}$$

so the answer is B.