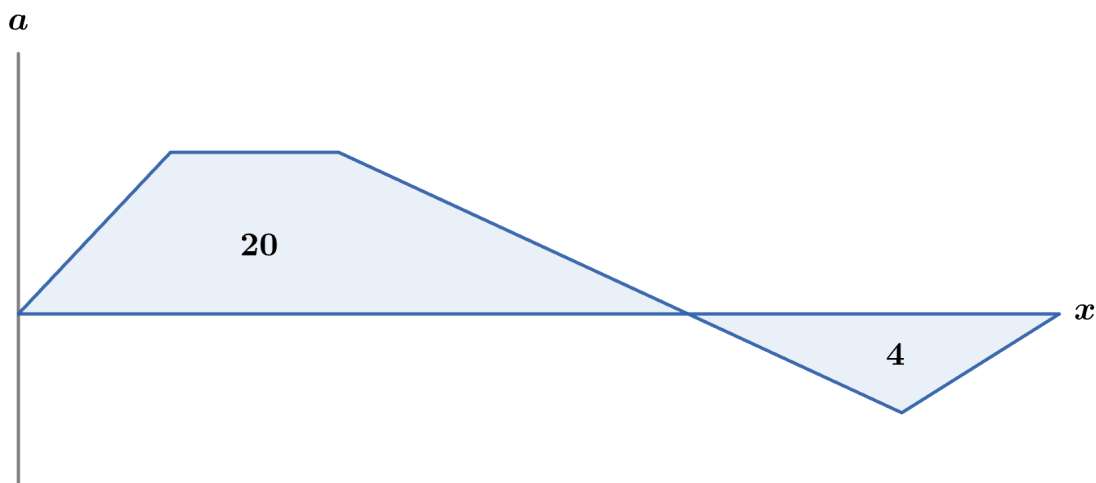


2009 F=ma Exam: Problem 11

Kevin S. Huang



Recall work is given by the position integral of the force,

$$W = \int F dx$$

Using Newton's 2nd law,

$$W = m \int a dx$$

which is the product of mass and the signed area under the a - x plot. Thus,

$$W = (2.25 \text{ kg})(16 \text{ m}^2/\text{s}^2) = 36 \text{ J}$$

so the answer is .