A mass of 3 kg is accelerated at 2 \( \text{m/s}^2 \) by a force \( F \) for a time of 5 seconds. How much work is done by this force in that time?

a. 6 J  
b. 15 J  
c. 30 J  
d. 60 J  
e. 150 J

\[ F = m \cdot a = 3 \times 2 = 6 \text{N}; \quad L = \frac{1}{2} a t^2 = \frac{1}{2} \times 2 \times 5^2 = 25 \text{ m}; \quad W = FL = 6 \text{ N} \times 25 \text{ m} = 150 \text{ J} \]
A mass of 2 kg is accelerated at 3 m/s² by a force \( F \) for a time of 4 seconds. How much work is done by the force in that time?

\[
F = m \cdot a = 2 \times 3 = 6 \text{N}; \quad L = \frac{1}{2} \cdot a \cdot t^2 = \frac{1}{2} \times 3 \times 4^2 = 24 \text{ m}; \quad W = FL = 6 \text{ N} \times 24 \text{ m} = 144 \text{ J}
\]

d. **144 J**  

\[
\text{a. 6 J } \\
\text{b. 24 J } \\
\text{c. 96 J } \\
\text{d. **144 J** } \\
\text{e. 256 J }
\]