

## Answer on Question 67163, Physics, Other

### Question:

An express elevator average speed is  $9 \text{ m/s}$  in its climb to the 20-th floor,  $80 \text{ m}$  above the ground. Assuming a load of  $1000 \text{ kg}$ , what average power must the lifting motor supply?

### Solution:

By the definition of the power we have:

$$P_{avg} = Fv = mgv = 1000 \text{ kg} \cdot 9.8 \frac{\text{m}}{\text{s}^2} \cdot 9 \frac{\text{m}}{\text{s}} = 88200 \text{ W}.$$

### Answer:

$$P_{avg} = 88200 \text{ W}.$$

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