

Question #73161, Physics / Other

A water pump of 1.2 kilowatts rating, pumps 480g of water into an over head tank at a height of 5m in 30 seconds. What is the efficiency of the pump?

Solution

$$k = \frac{P_{out}}{P_{in}};$$

$$P_{out} = \frac{\Delta E_{sp}}{\Delta t} = \frac{mg\Delta h}{\Delta t};$$

$$k = \frac{mg\Delta h}{\Delta t P_{in}} = \frac{0.48 \times 9.81 \times 5}{30 \times 1,200} = 6.5 \times 10^{-4} = 0.065\%$$

Answer: 0.065%

Answer provided by <https://www.AssignmentExpert.com>