Efficiency (19:49)

Illustrate how to calculate efficiency.

Convert .5 to percent.

Convert 65% to a decimal.

Graphically represent efficiency calculations using a pyramid.

Given output and input solve for efficiency.

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Identify the relation of output and input magnitude, and the upper bound of efficiency.

Determine the efficiency and losses for a motor that consumes 2kW of real electrical power and produces 1.7kW of useable rotational mechanical power.

Determine the output and losses of a 95% efficient gear box that consumes 2MW of mechanical power input.

Determine the input in units of W for a 60% efficient pump that produces 1hp of useable hydraulic output.

Explain how efficiency affects energy calculations.

Determine the efficiency of a 100W incandescent bulb that yields 2.4W of useable light.

Determine the efficiency of a 25W LED bulb that yields 2.4W of useable light.

Calculate the annual cost of lighting a factory with 100 100W incandescent bulbs for 12 hours a day given the cost of energy is $0.12/kWh.

Calculate the annual cost of lighting a factory with 100 25W LED bulbs for 12 hours a day given the cost of energy is $0.12/kWh. Calculate the cost savings of this method.

Calculate the output of each stage and total efficiency of the following system given 1000W input.

Identify the method of calculating the efficiency of multi-stage systems.

Identify how total efficiency relates to the efficiency ratings of individual stages.

Directly calculate the total efficiency of the above system.

Compare and contrast directly calculating total efficiency and calculating the output of each individual stage.

Directly calculate the total efficiency of the above system if the efficiency of the coupling stage drops to 30%.

Calculate the output of each stage of the above system if the efficiency of the coupling stage drops to 30%.