

Saved heat pump power

A room is heated by a heat pump. The rate of heat rejected by the heat pump to the room is 500 kW. The rate of heat subtracted from the outside is 400 kW. The power the heat pump uses is 100 kW. How much power is saved compared to heating the room by an electric heater?

The room needs 500 kW. If this comes from an electric heater, the heater needs 500 kW power input. The heat pump uses only 100 kW power input. So 400 kW power is saved by using the heat pump instead of the electric heater. That is the amount of heat that is subtracted from the outside.