Activity: Mechanical System Efficiency

W = F·d Joules

1. 0·24m = 0 W   7000n·24m = 168000 w   11000n·24m = 264000 w
   0 J   16,800 J   264,000 J

2. J/S = Watts

$\frac{0}{180} = 0$ watts $\frac{16,800}{360} = 466.67$ watts $\frac{264000}{720} = 366.67$ watts

Kaylen Marquez 2/2/16

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3. $P_{in} = IV$ P_{in} (watts)

15A · 12V = 180 watts   100A · 12V = 1200 watts   160A · 12V = 1920 watts

4 (%) = $\frac{P_{out}}{P_{in}} \cdot 100$

$\frac{0}{180}$ = 0% efficiency $\frac{466.7}{1200}(100) = 38.9\%$ $(100)\frac{366.7}{1920} = 19.1\%$

Conclusion:

1. The second scenario is most efficient. It ~~uses~~ has the most output watts.

2. Having no force will make it 0% efficient. Having low current will also make the machine less efficient.

3. Having more output watts will make the system more efficient.

4. Automotive engineers are concerned about all the gas cars are taking up. It takes too much oil and it harms the environment. They're trying to make cars safer and eco friendly.