



Problem of the Week

Problem B

When is This Deal a Deal?

Danielle uses a battery-powered magnifying headlamp when creating silver jewellery. The headlamp requires one AA battery.

Instead of buying a 10-pack of non-rechargeable AA batteries for \$17.50, she decides to buy one rechargeable battery and a charger for \$40.

Suppose each non-rechargeable battery is used until it no longer works and the rechargeable battery is used until it needs to be recharged. Also suppose that the length of time until a non-rechargeable battery no longer works is the same as the length of time until a rechargeable battery needs to be recharged.

After how many rechargeable battery uses will Danielle's choice be a better deal than buying 10-packs?

You may find the table below to be useful. For example, after 5 uses of the rechargeable battery, the price per use for the rechargeable battery will be $\$40 \div 5 = \8.00 .

Number of Rechargeable Battery Uses	Price Per Rechargeable Battery Use
5	\$8.00
10	
15	
20	
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