I recently went to the store to purchase light bulbs. The options were a bit overwhelming. Do I buy standard bulbs (incandescent) or energy efficient ones? If I buy energy efficient ones, which kind: LED or Compact Florescent (CFL)?

Below are the best-looking options to me from Home Depot’s website.

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*Make a decision about which bulb is most cost-effective over the life of the bulb and which bulb you suggest purchasing using math to explain your reasoning.*

Hint:

I suggest figuring out which of the two bulbs in each category is the best first. Then compare the winners of each category (Incandescent, LED, CFL).

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| **Incandescent:** |  |  |
| http://www.homedepot.com/catalog/productImages/1000/22/22786c35-797c-4f40-905a-e7b03f782797_1000.jpg Philips 60-Watt Household Incandescent Light Bulb (4-Pack) | Average Life: 1000 hours | $1.47 / package |
| http://www.homedepot.com/catalog/productImages/1000/fe/fe7f3ad1-356f-448a-b801-a271ad36e949_1000.jpg GE Double Life 60-Watt A19 Soft White General Purpose Incandescent Light Bulb (6-Pack) | Average life: 2000 hours | $3.97 / package |

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| **LED** |  |  |
| http://www.homedepot.com/catalog/productImages/1000/24/24ddba23-ab14-41d4-8839-3633e6d0b5c2_1000.jpgCree 9.5-Watt (60W) Soft White (2700k) Dimmable LED Light Bulb (E) | * Brightness: 800 Lumens * Estimated yearly energy cost: $1.14 (based on 3 hours per day, 11 cents kWh. costs depend on rates and use) * Life: 22.8 years (based on 3 hours per day) * Light appearance: 2700K (soft white) * Energy used: 9.5 Watts (equivalent to a 60 watt standard incandescent light bulb) * Lumens per Watt: 84 * Dimmable: yes * Lights instantly, omni-directional | $12.97 / each |
| http://www.homedepot.com/catalog/productImages/1000/79/79dd44ab-5fc2-4725-bae8-74c141ac3f63_1000.jpgPhilips 11-Watt (60W) A19 Household Soft White (2700K) Dimmable LED Light Bulb (2-Pack) | * Brightness: 830 lumens * Estimated yearly energy cost: $1.32 (based on 3 hours per day, 11c/kwh. costs depend on rates and use) * Life hours: 22.8 years (based on 3 hours/day) * Light appearance: 2700K (soft white) * Energy used: 11 Watts (equivalent to a 60-Watt standard incandescent light bulb) * Lumens per Watt: 76 * Dimmable: yes | $29.94 / case |

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| Compact Floursescent (CFL) |  |  |
| http://www.homedepot.com/catalog/productImages/1000/4f/4fee8c20-40cc-4d21-8038-e5fdfcc274bd_1000.jpgGE Reveal 15-Watt (60W) Bright from the Start CFL Light Bulb (2-Pack) | * Light output: 740 lumens * Energy used: 15-Watts * Life hours: 8,000 hours * Lasts 7.3 years based on 3 hours per day usage * Estimated yearly energy costs $1.81 based on 3 hours per day $0.11 per kWh * A19 shape with medium base for use in table lamps and enclosed fixtures * 2500K soft white light appearance * Contains mercury: Y * 2 bulbs per package | $13.97 / each |
| http://www.homedepot.com/catalog/productImages/1000/9f/9fbf21b9-2f2c-44a9-9428-608e60c76550_1000.jpgEcoSmart 14-Watt (60W) A19 Bright White CFL Light Bulb (4-Pack) | * Brightness: 800 lumens * Estimated yearly energy cost: $1.69 (based on 3 hours per day, 11¢/kWh. costs depend on rates and use) * Life hours: 7.3 years * Light appearance: 3500K (bright white) * Energy used: 14-Watt (equivalent to a 60-Watt standard incandescent light bulb) * Lumens per Watt: 57 * Contains mercury: Y (for more on clean-up and safe disposal visit: epa.gov/cfl) * Dimmable: N | $15.94 / each |