Should you buy a hybrid, electric or gasoline powered car?

Honda Insight 2019

MPG: Up to 55 city / 49 highway
MSRP: From $22,930

2019 Honda Civic

MPG: Up to 32 city / 42 highway
MSRP: From $19,450

The Honda Insight has now replaced the Honda Civic as their hybrid vehicle.

Besides that I want to save the planet and try to invest in products that reduce green house gasses, how quickly (or slowly) would I make up the cost difference between these two cars in gas savings?

1. How long do you guess it would take to save enough on gasoline from purchasing the Insight to make up the difference between the two cars?

2. What information would you like to know to help you make this decision?

On average, people drive about 12,000 miles per year. Let's use that mileage for our comparison. Today, gasoline costs about $2.28 per gallon.

3. If we decide to use the average mile/per gallon for each car (city and highway mileage) what gas mileage would each car get?

4. At these average rates, how many gallons of gasoline would you use for each car in order to drive 12,000 miles in one year?

5. Do some quick estimation or computation to see whether one year of gasoline would make up the difference between the costs of the cars.

6. Try to write an equation for the cost of "y" years of each of the cars.

7. In what ways could you try to answer our question "When does it make dollar sense to buy an Insight instead of a Civic?"

8. Do the math and find out after how many years the cost of driving one car is the same as driving the other.

9. How would your equations change if you drove almost always in city traffic?

10. How would your equations change if you drove almost always on highways?

11. How long do you think your family might own a car?

12. When some one brags about how long their type of car has lasted they often tell the mileage that their car has reached. What extreme mileages have you ever heard about?

13. How do the equal costs by mileage driven and equal costs by years of ownership portend for buying the Insight instead of the Civic?

Let's add to our comparison an all-electric car.

2019 Nissan Leaf

MSRP: From $29,990
40 kWh lithium-ion battery

The average price people in the U.S. pay for electricity is about 12 cents per kilowatt-hour.

14. If your battery was totally drained and you charged your 40kWh leaf battery, how much would that cost you in electricity?

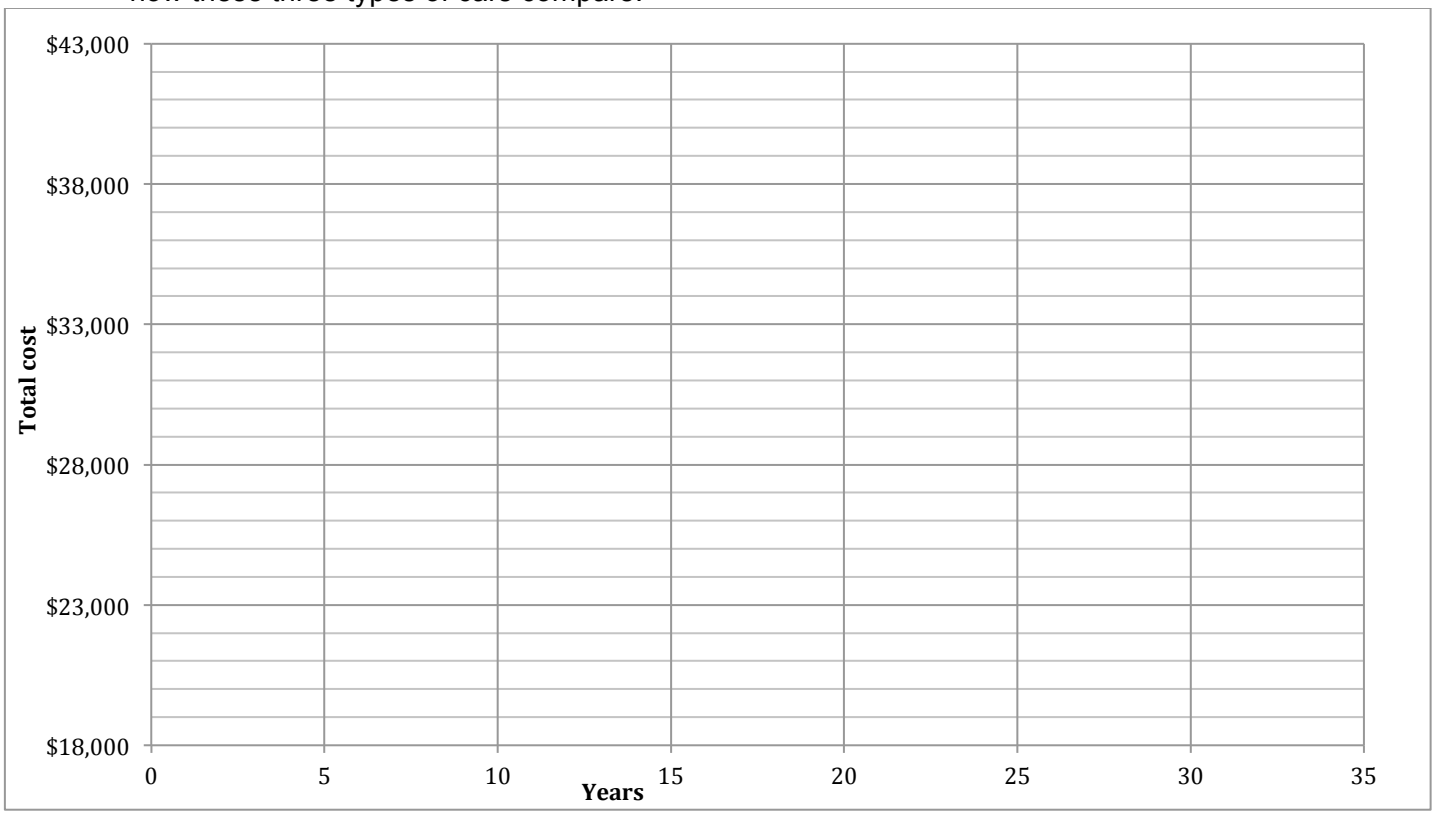
The leaf can travel 151 miles on one full charge.

15. What is its cost per mile of electricity?

16. If you drove 12,000 miles in one year in your Nissan Leaf, how much would it cost you in electricity?

17. Write an equation for the total cost of driving a Nissan Leaf for one year.

18. Either by hand or with graphing software, roughly graph they three equations that you found to see how these three types of cars compare.



19. After all of this research and computation which sort of car would you buy and why?