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|----|---|-------------------|-------------------|
|    |   | Buying Club       | Fergies Grocery   |
| 1. | Which is the best buy?                      | 40 mile roundtrip | 16 mile roundtrip |
|    | Approx. 100 ounces of<br>Honey Nut Cheerios | \$ 6.25 49 oz     | \$ 4.19 20 oz     |
|    | 30 pounds of<br>Red Delicious Apples        | \$ 5.99 10 lbs    | \$ 2.49 3 lbs     |
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- |    |  |                       |                   |
|----|--|-----------------------|-------------------|
| 2. | Which is the best buy?                       |                       |                   |
|    | 256 ounces of<br>Tropicana Orange Juice      | \$ 8.29 4 - 64 oz     | \$ 2.99 1 - 64 oz |
|    | 36 - 2 packs of<br>Reeses Peanut Butter Cups | \$ 13.39 36 - 2 packs | \$ .59 1 - 2 pack |
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3. Considering the different sizes, amounts, and weight of eggs, which seems to be the best buy?
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|--|------------------------|
|  | \$ 1.09 18 large 36 oz |
|  | \$ .69 12 large 24 oz  |
|  | \$ .39 6 large 12 oz   |
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4. What is the best buy in Pizza? All of them have pepperoni.
- |               |                    |
|---------------|--------------------|
| Papa Johns    | 13.55 14" diameter |
| Pizza Hut     | 14.24 14" diameter |
| Dominos       | 13.49 14" diameter |
| Cousins Pizza | 10.75 16" diameter |
| Costco        | 9.95 18" diameter  |
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5. What are some other factors that would be considered in your decision to buy pizza in addition to the price?

	Home Depot 40 mile roundtrip	Good's Store 16 mile roundtrip	Buck Hardware 9 mile roundtrip
1. Which is the best buy?			
	1 4 pack	1 4 pack	1 4 pack
5 - 60W 4 pack Light Bulbs	1500 hours \$ 1.44	1000 hours \$ .99	1000 hours \$ 1.39
100 # Sunflower Seeds	25# \$ 8.88	50# \$ 12.99	10# \$ 5.99

2. Which is the best buy?			
3 Bags Scott's Fertilizer	\$ 22.98	\$ 21.99	\$ 36.98

	Convenience 2 mile roundtrip	Grocery 9 mile roundtrip
3. Where is the best price?		
2 Liter Sprite	\$ 1.89	\$ 1.39
12 cans - 12 oz can Sprite	1 for \$ .75	12 for \$ 3.99

4. Where is the best price?		
1 Gallon 2% Milk	\$ 3.06	\$ 3.22
1/2 Gallon Ice Cream	\$ 4.19 Turkey Hill	\$ 4.79 Breyers

5. Why would people buy in a convenience store?

6. Considering the different sizes, amounts, and weight of eggs, which seems to be the best buy?

\$ .79 12 jumbo 30 oz

\$ .79 12 x-large 27 oz

\$ .69 12 large 24 oz

\$ .49 12 medium 21 oz

For numbers 1-3 You left home with a full tank of gas and drove 443 miles.

1. At the gas station you filled the tank and it took 19 gallons. What is the miles per gallon?
2. If gas is 2.19 per gallon, how much did the 19 gallons cost?
3. What is the cost per mile for the gasoline alone?
4. What percentage of the full coverage is liability only, for a 2001 Taurus?

Consult the charts in lesson 15 of the Teacher Manual for numbers 5-10.

5. What is the greatest expense for owning and operating a vehicle?
6. What is the cost per mile for the depreciation (from 2001 to 2000) for 15,000 miles?
7. Find the cost per mile for the gasoline, if it was driven for 15,000 miles.
8. Figure the cost per mile for the insurance.
9. How much would you save in a year by carrying liability only instead of full coverage on the 2001 Taurus?
10. Were you surprised at the costs incurred for driving a horse and buggy? If the miles driven in a week were only 20, what would be the cost per mile for a horse and buggy?

For numbers 1-3 You left home with a full tank of gas and drove 382 miles.

1. At the gas station you filled the tank and it took 12.5 gallons. What are the miles per gal.?
2. If gas is 2.19 per gallon, how much did the 12.5 gallons cost?
3. What is the cost per mile for the gasoline alone?
4. What percentage of the full coverage is liability only, for a 2005 Taurus?

Consult the charts in lesson 15 of the Teacher Manual for numbers 5-10.

5. What are the 2nd and 3rd highest expenses for owning and operating a vehicle?
6. What is the cost per mile for the depreciation (from 2005 to 2004) for 15,000 miles?
7. Find the cost per mile for the gasoline if it was driven for 15,000 miles.
8. Figure the cost per mile for the insurance.
9. How much would you save in a year by carrying liability only instead of full coverage on the 2005 Taurus?
10. If a horse that pulls the buggy goes 20 miles per week and he eats  $\frac{1}{4}$  of a bale of hay per day, how many miles per bale does he go?

## Lesson 11 Comparison Shopping

There are three key ideas in this lesson. The first is making sure you are comparing apples to apples. The second is considering all of the factors involved in a purchase, and the third is not trusting your eyes. Let's consider several examples to illustrate these points.

### Apples to Apples

Recently we had a water softener installed in our home. I need to buy salt periodically for the unit. Martin's Appliance installed the water softener, so I buy 50# bags for \$5.29 at their store. One day I was at Home Depot and saw what appeared to be the same yellow bag for \$4.79. My first thought was to buy it there in the future and save \$.50 per bag. But upon closer examination, I noticed they weren't the same size. The Home Depot bag, which looked identical, was only 40 pounds (or 40#). When deciding between two similar products, you need to compare apples to apples, or a common unit of measure. I decided to find the price per one pound. To do this we divide the pounds into the price to come up with a price per pound. When you work it out, Martin's is  $\$5.29 \div 50$  which is \$.1058 or 10.58¢ per pound. Home Depot's 40# bag is  $\$4.79 \div 40$  or 11.98¢ per pound. So Martin's is the better buy, even though it didn't initially appear to be.

Something else I have learned is that often stores will guarantee the lowest price. There used to be two building supply stores that claimed to offer the lowest prices. When I went in I pinned down a salesman as to how this could be true. He taught me that even though there are Makita Drills in both stores, they aren't the same kind of drill. Or if they seem to be the same drill, they aren't both the same manufacturer. Once again, when doing comparison shopping make sure you are comparing the same product, and then if so, work it out so you are comparing the same unit pricing as in price per pound, or per ounce, or per hundred.

I was shopping for frozen apple juice and noticed there were 2 cans of different size. The large can was 12 ounces for 84¢ and the small can was 8 ounces for 48¢. In most cases the larger can is the better buy, but I did the division to make sure. I went with the price per ounce and found the large can was  $84 \div 12 = 7¢$  per ounce and the small can was  $48 \div 8 = 6¢$  per ounce and the better buy.

### Other Factors

In the first example above there is another factor, and it is the distance to the store. Martin's is also only 8 miles away, while Home Depot is a 20 mile drive. Since it costs at least 25¢ per mile to operate a car, the 12 miles difference makes it \$3.00 a trip to buy salt. Even if Home Depot was cheaper, it would not be a better buy because of this factor.

I have relatives who are very thrifty when it comes to smaller items like groceries, and they are big fans of coupons. Once they went to 4 or 5 stores to find one that honored their coupons, which only amounted to pennies per can. On another occasion they bought an item and then drove back and returned it because they found they had a coupon at home for a different brand.

My huge question is, “What about the dollars you spent driving around to save the nickels and dimes?”

## Buying Clubs

You can't assume anything any more. I have seen buying clubs that package their products in larger quantities and with different boxes that are more per ounce than buying them in a regular supermarket. Even if it is a larger box and a better buy, with larger quantities of perishable items there is a greater chance of not using all of it and having to throw away some of the product. Sometimes smaller is better.

## Low Price Guarantee

Years ago there were two local building supply stores that both guaranteed the lowest price. This puzzled me so I did some inquiries and found they didn't carry the same brands and/or the same sizes. You will see in the practice pages that it is not always easy to compare apples to apples. They may even have the same company make two different quality drills, for example. So, they do have the lowest price for that model and make.

The easiest thing to do in a grocery store is find what is called unit pricing. Even though there might be different prices for different sizes, it will give you the price per ounce or price per 100 count. This makes it very easy to be accurate in your comparisons without having to figure this yourself.

## Don't Trust Your Eyes

My first real job was at the Whitehall Dairy Mart. I had just turned 16 and I had to pack ice cream, peel potatoes for french fries, serve deli customers and sweep the floor at the end of the day. Once when I was waiting tables I had two customers order different sizes of soda pop. The large at that time cost 15¢ and the small cost 10¢, but the large glass looked huge in comparison. The guy who had ordered the small took one look at the large and asked me to take it back and bring him a large. I took it back on the tray, and the cook smiled, picked up a large glass and poured the small into it, added an ice cube and that was it. They were virtually the same size, but the large glass, also used for milkshakes and ice cream sodas, had a fake glass bottom and gave the impression of being much larger even though it wasn't. If you are curious, ask how many ounces of liquid for each size so you can compare numbers and not be deceived by looks.

When I get drinks in a restaurant I almost always ask for no ice. Ice is filler, and the drinks are usually cold anyway. I get a lot more liquid for my dollar.

## Example 1

What if you were purchasing 2 reams of paper for your printer or copy machine and wanted to find the best buy. First you have to identify what weight you want, usually 20# or 24#. Then

there is the brightness factor. If you are using the paper for copying or receiving faxes you might not need a high quality type, but if you are printing documents that have to look good and feel good, you would want the heavier, brighter paper. Purchasing isn't always just about price. Other factors have to be considered.

### Example 2

I was in Kenya and noticed a price sheet for using their computers to go online. The price sheet looked like this:

50 shillings	20 minutes
100 shillings	40 minutes
200 shillings	60 minutes

Which is the best buy? There are a couple of ways to solve this problem. If we say price per minute, then the minute is in the denominator (price/minute), and is the divisor. The chart looks like this with our per minute unit pricing.

50 shillings	20 minutes	$50 \div 20 = 2.5$ shillings per minute
100 shillings	40 minutes	$100 \div 40 = 2.5$ shillings per minute
200 shillings	60 minutes	$200 \div 60 = 3.3$ shillings per minute

Obviously it is better to buy in lots of 50 or 100 shillings. If you buy 100 shillings and use your 40 minutes then do it again, you have spent 200 shillings for 80 minutes on the internet. But if you had purchased 200 shillings initially, you would only have received 60 minutes!! This must be a mistake, but it shows that you can't assume more minutes means a better rate. By the way, when I left, they still hadn't changed the signs!!

### Example 3

One of the strangest experiences I have had in comparing apples to apples was buying sand for a sandbox. I borrowed a pickup truck and went to the local lumber yard where I knew the owners. They weighed the truck then sent me down to get a load of sand. I was to come back and be weighed again when I had a load of sand. The difference between the weight of the empty truck and the full truck would be the weight of the sand, and I would pay by the pound. It had just rained the night before and the sand was quite heavy. I mentioned this when I was checking out, but was confidently assured that it didn't affect the amount of sand because you could add water without changing the volume of sand. Do you see the fallacy in their reasoning? I never was able to convince them of their error, and I finally dropped it. I agree that you can have a 5 gallon bucket of sand and still add a lot of water to the bucket and it still is the same amount of sand. But I wasn't paying by volume but by weight, and a 5 gallon bucket of sand with water is much heavier than a bucket of sand without water.

## Lesson 15 Automobiles, Cost to Operate

To count the cost of owning a car, there are two factors to consider, your need and the costs. The first question is, how badly do you need one, or what do you need a car for? In other words, are you using it every day as a part of your job, as in a traveling salesman, or do you think it would just be nice to have one? If you really need one, then you'll probably lean towards a newer, more reliable model. If you don't really need one, then a good used car will probably suffice.

Consider the costs of operating a car

	<u>Newer</u>	<u>Used</u>
Insurance	Higher	Lower
Regular Maintenance	Similar	Similar
Repairs	Lower	Higher
Gasoline Mileage	Depends	Depends
Depreciation	Higher	Lower
Fees	Same	Same

### Insurance

Liability insurance is required by law. In most states you must show proof of insurance coverage to register your vehicle and obtain a title. If you want full coverage, you will be carrying liability plus collision and comprehensive. It is simple: the more you pay, the more coverage you get. As in the lesson on purchasing a car, I am focusing on the Ford Taurus. I have chosen the 2001 model as the used car and the 2005 Taurus as the new car.

	2001	2005
Full coverage	509.00	578.00
Liability Only	260.00	260.00

### Gasoline Mileage

You may be surprised to learn that this is the largest part of the cost of keeping a car on the road, but with the rising cost of fuel, it is becoming a more significant factor. The only way to know how much this will be is to estimate how many miles you will drive in a year and divide this by your miles per gallon. This will tell you how many gallons of gas you'll use; then you can multiply this by the price of a gallon of gas for the annual cost of gasoline.

Let's examine two cars for a specific example. Car number one gets 16 mpg and car number two gets 22 mpg. Each is driven 15,000 miles per year.

Car #1 - For total fuel used:  $15,000$  divided by  $16$  mpg =  $937.5$  gallons. If the price of gas is  $2.25$  per gallon, the cost is  $937.5$  times  $2.25$  or  $2,109.38$  for the year. The price per mile (for gasoline only) in the  $16$  mpg car is  $2,109.38$  divided by  $15,000$  =  $14$  cents per mile.

Car #2 - For total fuel used:  $15,000$  divided by  $22$  mpg =  $682$  gallons. If the price of gas is  $2.25$  per gallon, the the cost is  $682$  times  $2.25$  or  $1,534.50$  for a year's worth of gasoline. The price per mile (just for gasoline) is  $1,534.50$  divided by  $15,000$  =  $10$  cents per mile.

The difference of  $6$  mpg saves me  $574.78$  annually, or about  $95.80$  for every  $1$  mpg difference.

## Repairs

Another factor to think of if you are buying an older used car is what kind of mechanic you have nearby. I have a great mechanic, who is also a good friend. As a result, I have a  $15$  year old Jeep which requires a lot more attention than my  $2002$  vehicle. If I didn't have such a good mechanic, I would lean toward newer vehicles.

I tried to get figures on the average cost of repairs for a vehicle according to how old it was, but couldn't put my hands (or my cursor) on them. But as everyone knows who owns a car, the cost will vary according to where you live, how much you drive it, how you take care of it, etc. In  $2004$ , my  $1990$  Jeep cost  $776.00$  in repairs, while the  $2002$  vehicle was  $375.00$ . So we will just make the broad statement that all things being equal, the newer the vehicle, the fewer the repairs.

## Regular Maintenance

This includes fluids, wiper blades, and other small items, but I am focusing on oil changes. If we figure an oil change every  $3,000$  miles, then there are  $5$  in a year. If the cost is around  $30.00$  each time, that is an annual cost of  $150.00$ .

## Depreciation

To illustrate this principle, I went on the Internet and found the values of a  $2000$ ,  $2001$ ,  $2002$ ,  $2003$ ,  $2004$ , and  $2005$  Ford Taurus SEL four door sedan as an example. This is one of the best selling cars in America. I used Kelly Blue Book online and used the standard equipment that came on each vehicle. I selected the same features for each car, from the same appraisal service to be consistent and compare apples to apples. I let the computer figure out the average miles for this vehicle. They came up with the numbers listed below. This chart is being written in the summer of  $2005$ .

2000	5 Years Old	\$ 7,340
2001	4 Years Old	\$ 9,270
2002	3 Years Old	\$ 11,105
2003	2 Years Old	\$ 12,705
2004	1 Year Old	\$ 15,085
2005	New	\$ 20,997

## Fees

There are two types of annual fees or expenses, inspection, and registration. These vary from state to state and county to county. I decided to call the inspection 60.00 and the tag registration 36.00.

## Annual Cost of Operating a Vehicle

To find the cost of operating a car for a year in the US consider the following table. I subtracted the value of a 2005 minus the 2004 to find depreciation for the 2005 Taurus. Similarly I subtracted the 2000 from the 2001 for the 2001 depreciation.

To find the gas mileage I searched and found the miles per gallon or mpg for a 2005 Taurus to be 20 around the city and 27 on the highway. I figured 23 mpg as an average for the year. I also chose 15,000 miles as the average amount of miles driven. The 2001 is older and uses more gas and this is reflected in the consumption being higher for its 15,000 miles. After adding all of the costs, the 2001 model is 4,985.00 per year. Since it went 15,000 miles,  $4,985.00 \div 15,000 = .33$  or 33¢ per mile. The 2005 Taurus is  $8,403.00 \div 15,000 = .56$  or 56¢ per mile.

	2001	2005
Insurance	509.00	578.00
Gasoline	1,600.00	1,467.00
Repairs	700.00	200.00
Regular Maintenance	150.00	150.00
Depreciation	1,930.00	5,912.00
Fees	96.00	96.00
Total	4,985.00	8,403.00

## Horse & Buggy

I have heard people say when faced with the cost and responsibility of owning a car, "I am going to drive a horse and buggy and sell my car!!". So I interviewed an Amish friend who has owned and driven one for years to get some numbers. Here they are, minus the vet bills which vary widely.

Used Buggy	3,000.00		
12 Volt Batteries	50.00	per year	for night driving
Maintenance	150.00	per year	wheels, etc.
Average Horse	2,000.00		
Hay & Feed	912.50	per year	2.50 per day
Shoes	279.50	per year	43.00 per 8 weeks
Liability Insurance	90.00	per year	

It is not as idyllic as it seems, is it? If he drives it 30 miles per week, times 52 weeks; 1,560 miles is his annual distance on the road. If a buggy and horse last 10 years, then the depreciation is 500.00. Add this to the other annual expenses to get 1,982.00 per year. Dividing this by 1,560 miles, we find the cost per mile is 1.27!! This almost 4 times the cost of operating a 2001 Taurus!