Buying and Selling at a Discount

These situations describe Buying and Selling at a Discount from the customer's point of view. Whenever you buy something at a discounted price, the following formula applies:

selling price (Sp) = marked price (Mp) – discount (*d*)

Vocabulary:

Percentage: A way of expressing a proportion, a ratio or a fraction as a whole number, by using 100 as the denominator. A number such as "45%" ("45 percent") is shorthand for the fraction 45/100 or 0.45.

Selling price: is what you actually pay for the thing

Marked price: is the normal price of the thing without a discount

Discount: is either a dollar amount, or a percentage of the marked price

PDE Academic Standards: 2.11.A (Assessment Anchors: M11.A.1.1; M11.1.2; M11.2.1), 2.2.11.A, 2.5.11.C

Remember:

Pretty **P**lease **M**y **D**ear **A**unt **S**ally
(From left to right; **P**arentheses; **P**ower; **M**ultiply; **D**ivide; **A**dd, **S**ubtract)

First, Lets' Review!

Review 1: Jason's electronic temperature gauge is broken; it only reads Celsius (C), but his service manual specifications are in (F). The temperature of the coolant he is measuring is 83^{o} C. What is the temperature in F?

$$F = (\frac{9C}{5}) + 32 \qquad C = \frac{5(F - 32^{o})}{9}$$

Review 2: What is the temperature of the coolant in Celsius if 47^{o} Fahrenheit?

Example 1: A quality pen that normally costs $20.00 is being sold for only $12.00
Calculate the discount in dollars, and also as a percentage of the marked price.

Marked price = $20.00
Selling price = $12.00
Selling price = marked price – discount

So discount = marked price - selling price
= $20.00 - $12.00
= $8.00

Discount as a percentage:

$$discount\% = \frac{\$8.00}{\$20.00} \times 100 = 40\%$$

Example 2:
The usual price for an adult movie ticket at Big Screen Cinemas is $18. However, on Tuesdays they offer a 15% discount. Calculate the cash value of the discount and the cost of the tickets on Tuesdays.

Marked price = $18
Discount price = 15% of Marked price

$$= \frac{15}{100} \times (marked\ \ price)$$
$$= \frac{15}{100} \times \$18$$
$$= \$2.70$$

So, (Selling Price) = (Marked Price) – Discount

= $18.00 - $2.70

= $15.30

On Tuesday's, the cost of an $18.00 ticket is: $15.30

Example 3:
A music store has reduced all stock by 25%. A customer who purchased a CD from this store paid $24. What is the usual price of this CD, and what is the cash discount?

Selling price = $24.00
Discount = 25% of the Marked price
(Marked price) = (Selling price) + Discount

Let's express each of these quantities as percentages of the marked price:

Marked price		Selling price		Discount
100% of the Marked price =		(X% of the Marked price)	+	(25% of the Marked price)

So, the Sp must be: (100-25 = 75) % of the Mp.

$$Selling\ price = \frac{75}{100} \times (marked\ price)$$

$$Marked\ price = \frac{100}{75} \times (selling\ price)$$

$$= \frac{100}{75} \times 24$$

$$= \$32$$

The CD usually costs $32.00, the cash discount is ($32.00 - $24.00) = $8.00

Example 4:
An air filter that usually sells for $18.00 is being sold for only $9.00. What is the discount in dollars, and also as a percent of the marked price?

Marked price = $18.00 Selling price = $9.00 *(Selling price = Marked price – Discount)

$$discount = \$18.00 - \$9.00$$

$$= 9$$

$$d\% = \frac{\$d}{\$Mp} \times 100\%$$

$$= \frac{9}{18} = \frac{1}{2} = .5 \times 100\%$$

$$= 50\%\ \ discount$$

Example 5:
d = 30%, Mp = 45, solve for Sp

Example 6:
Mp = 950, Sp = 600, solve for *d* in %

Example 7:
Sp = 280, *d* = 40%, solve for Mp

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Worksheet - Buying at a Discount

Name: _____ Session: _____ Date: _____

Refer To Buying At a Discount Handout for All Formulas

You Must Show All Work!

1. An oil filter that usually sells for $8.00 is being sold for only $6.00. What is the discount in dollars, and also as a percent of the marked price?

2. To sell old stock, you are willing to sell an engine overhaul kit that has a selling price of $500 and has been sitting on the shelf for 3-years for $200. What is the discount in dollars, and also as a percent of the marked price?

3. The new IPod is $300. But Circuit City is offering a 15% discount on Friday. Calculate the cash value of the discount and the cost of the IPod on Friday.

4. Your friend is selling his 2000 Ford Mustang. The selling price is $5000. However, if you can come up with the cash today, he'll offer you a 20% discount. Calculate the cash value of the discount and the cost of the Mustang if you buy the car today.

5. Pep Boys has reduced the price of all custom wheels by 35%. A customer who purchased a chrome wheel with center cap paid $140. What is the usual price for this wheel, what is the cash discount, and what is the price for a set of 4-wheels at the discounted price?

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Homework - Buying at a Discount

Name: _____ Session: _____ Date: _____

Refer To Buying At a Discount Handout for All Formulas

You Must Show All Work!

1. Barnes and Noble Booksellers reduced the price of all automotive technology books by 40%. You purchased a new copy of Parts and Service Management for $30. What is the usual price for this book, and what is the cash discount?

2. The new Snap-On toolbox you want costs $4000. However, if buy it today, your Snap-On sales rep can offer you a 30% discount. Calculate the value of the discount and the cost of the toolbox if you buy it today.

3. The latest x-Box game is $600. But Best Buy is offering a 22% discount at midnight on Wednesday. Calculate the cash value of the discount and the cost of the Xbox on Wednesday.

4. To get some cash to buy the Xbox, you plan to sell your old PlayStation with 10-games on eBay. Even though you paid $750 for the console and games, you are willing to sell all of it for $500. What is the discount in dollars, and also as a percent of the marked price?

5. Sp = 350 *d%* = 35% Solve for Mp and discount