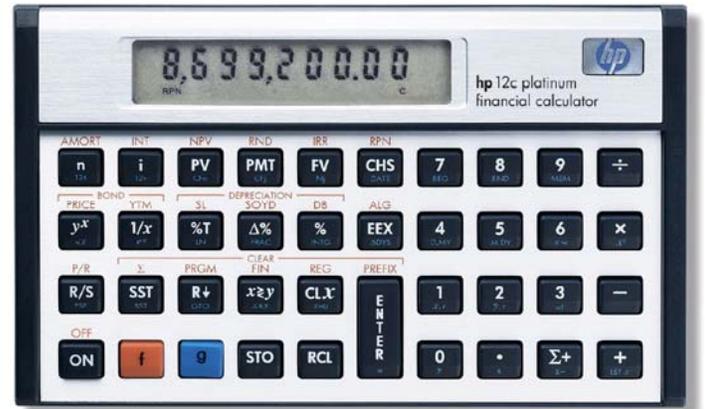




hp calculators

HP 12C Platinum
Cost, Price and Margin Calculations



Cost, price and margin concepts

Cost, price and margin on the HP12C Platinum

Practice solving cost, price and margin problems

Cost, price and margin concepts

Items that are bought and sold have a cost to the seller and a price to the buyer. The difference between the cost and the price is the gross amount the seller makes on the sale. There are two ways of computing the percentage this difference represents. The term markup uses the cost as the basis for the percentage calculation while margin looks at the price as the basis. The diagram in Figure 1 illustrates the relationship between cost and price.

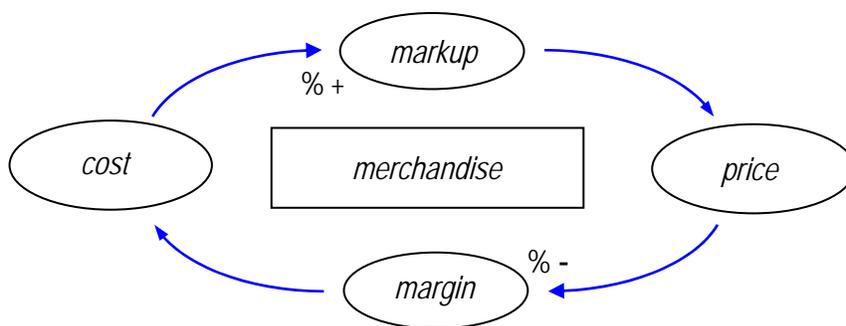


Figure 1

The cost is the price minus a percent of the price called **margin**. The price can also be viewed as the cost plus a percentage of the cost called **markup**. The following expressions relate margin, price and cost with each other.

$$MAR(\%) = \left(\frac{PRC - CST}{PRC} \right) \times 100 \qquad PRC = \frac{CST}{1 - \left(\frac{MAR(\%)}{100} \right)} \qquad CST = PRC - \left(\frac{MAR(\%) \times PRC}{100} \right)$$

How to calculate cost, price and margin on the HP12C Platinum

The table below summarizes the keystroke sequence for each of the calculations above in RPN mode:

Unknown	Keystrokes
margin	key in price, ENTER , key in cost, Δ% CHS
cost	key in price, ENTER , key in margin, % -
price	key in cost, ENTER , 1, ENTER , key in margin, % - ÷

Figure 2

The table below summarizes the keystroke sequence for each of the calculations above in algebraic mode:

Unknown	Keystrokes
margin	key in price, ENTER , key in cost, Δ% CHS
cost	key in price, - , key in margin, % =
price	key in 1, - , key in margin, % = , key in cost, ÷ x↔y =

Figure 3

Practice with solving interest rate conversion problems

Example 1: A television costs \$195 and its price is \$300. What is the margin obtained by the store that sells these TV sets?

Solution: The keystroke sequence to calculate the margin in this case is:

3 0 0 **ENTER** **1 9 5** **Δ%** **CHS**



35.00

Figure 4

Answer: The margin is 35% for a \$195 cost and a \$300 price.

Example 2: The store manager wants to sell more TV sets and wants to reduce the price. If she cannot reduce the margin below 28%, what is the lowest price allowed for this TV set? Assume the same \$195 cost.

Solution: The keystroke sequence to calculate the lower price in this case is:

In RPN mode: **1 9 5** **ENTER** **1** **ENTER** **2 8** **%** **-** **÷**
 In algebraic mode: **1** **-** **2 8** **%** **=** **1 9 5** **÷** **x↔y** **=**



270.83

Figure 5

Answer: The lowest price for this TV set is \$270.83 given a 28% margin and a \$195 cost.

Example 3: Based on these figures, the store manager decides to sell the TV set for \$284.99. What is the margin achieved with this price?

Solution: The following keystroke sequence calculates the margin with the new price:

2 8 4 **.** **9 9** **ENTER** **1 9 5** **Δ%** **CHS**



31.58

Figure 6

Answer: With the new price, the margin is now 35%.

Example 4: A new stereo system has a sales price of \$150.75. Given a 35% margin, what is its cost?

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Solution: The keystroke sequence to calculate the cost with these figures is:

In RPN mode: $\boxed{1} \boxed{5} \boxed{0} \boxed{\cdot} \boxed{7} \boxed{5} \boxed{\text{ENTER}} \boxed{3} \boxed{5} \boxed{\%} \boxed{-}$
In algebraic mode: $\boxed{1} \boxed{5} \boxed{0} \boxed{\cdot} \boxed{7} \boxed{5} \boxed{-} \boxed{3} \boxed{5} \boxed{\%} \boxed{=}$



Figure 7

Answer: The cost is \$97.99.

Example 5: When calculating the price of a toaster, a 45% markup was used. What is the margin obtained with the sale of a toaster with this markup?

Solution: The following keystroke sequence calculates the margin given a 45% markup:

In RPN mode: $\boxed{4} \boxed{5} \boxed{\text{ENTER}} \boxed{\text{ENTER}} \boxed{1} \boxed{\times \div y} \boxed{\%} \boxed{+} \boxed{\div}$
In algebraic mode: $\boxed{1} \boxed{+} \boxed{4} \boxed{5} \boxed{\%} \boxed{=} \boxed{\div} \boxed{4} \boxed{5} \boxed{\times \div y} \boxed{=}$



Figure 8

Answer: A margin of 31.03% is equivalent to a 45% markup.