

Summary: All Six Markup Formulae

when %markup is based on selling price:

Formula 1: $\$cost = \$selling\ price * (1 - \%musp)$

Formula 2: $\$selling\ price = \$cost / (1 - \%musp)$

when %markup is based on cost:

Formula 3: $\$selling\ price = \$cost * (1 + \%muc)$

Formula 4: $\$cost = \$selling\ price / (1 + \%muc)$

Markup conversions:

Formula 5: $\%musp = \%muc / (1 + \%muc)$

Formula 6: $\%muc = \%musp / (1 - \%musp)$

Break Even Formulae

- Break Even Point:
 - Formula 1: $\#BEP = Total\ Fixed\ Cost / \C
 - Where $\$C = USP\ minus\ UVC$
 - Note that algebraically, $TFC = \#BEP * \$C$
 - $\$C = TFC / \#BEP$ and so on
 - Formula 2: $\$BEP = \#BEP * USP$
 - Formula 3: $\$BEP = TFC / \%C$
 - Where $\%C = \$C / USP$

Break Even Formulae

- The Incremental Break Even Point
 - Formula 4: $\Delta\#BEP = \Delta \text{ Fixed Cost} / \C
 - Where $\$C = \text{USP} \text{ minus } \text{UVC}$
 - Formula 5: $\Delta\$BEP = \Delta\#BEP \times \text{USP}$
 - Formula 6: $\Delta\$BEP = \Delta \text{ Fixed Cost} / \%C$
 - Where $\%C = \$C/\text{USP}$
 - Revised BEP, units or dollars, may then be figured out by adding the Δ to the original estimate.
 - Note that the Δ Fixed Cost could be as little as one dollar. This could come in very handy!
 - that is, if you wish to know, for instance, how many sales dollars will cover a one dollar increase in Fixed Cost.

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Profitability and Breakeven Analysis

- First determine:
 - Unit Sales minus $\#BEP$,
 - Dollar Sales minus $\$BEP$,
 - i.e. whichever information is/are available
- If the above is.....
 - positive, you have a surplus or excess Units or Dollars
 - negative, you have a deficit or shortage Units or Dollars
- Finally.....
 - Profit = surplus units * \$contribution per unit or \$C
 - Loss = deficit units * \$contribution per unit or \$C

 - Profit = surplus dollars * %contribution or %C
 - Loss = deficit dollars * %contribution or %C

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