Percent Shortcuts

Do you like shortcuts for solving math problems? We are sure you do! Just recently we used **four** steps to find the sale price. Today we will complete the same problems, but this time in only **two** steps… In fact, we may even complete some of the problems in just **one** step… Now that is efficient problem solving!!!

To do this great feat, you will need to know a few things.

- ✓ An item originally costs __100__ % of the price.
- ✓ If an item is on sale for a 20% discount, you only have to pay __80__ % of the price.
- ✓ To pay an 8% tax, you will have to pay __108__ % of the price.

Examples

#1   A tie has a regular price of $18.50. It is now on sale for 20% off. Find the sale price.

$$100\% - 20\% = 80\%$$

$$.80\,(18.50) = \$\underline{14.80}$$

#2   Sales tax in Putnam County is 8%. What is the sales tax on a $22.50 tie?

$$100\% + 8\% = 108\%$$

$$1.08\,(22.50) = \$\underline{24.30}$$

#3 Yesterday Jackie bought a new sweater that cost $28. How much did she have to pay, including a 5% sales tax?

$$100\% + 5\% = 105\%$$

$$1.05\,(28) = \$29.40$$

#4 Find the price of an item, including a $7\frac{1}{2}\%$ tax, that originally sold for $320 and is now marked down 20%.

Two-Step Method:

$$.80\,(320) = 256$$

$$1.075\,(256) = \$275.20$$

One-Step Method:

$$.80\,(320)(1.075) = \$275.20 \quad \text{wow} \ \copyright$$

#5 Find the price of an item, including a $6\frac{3}{4}\%$ tax, that originally sold for $200 and is now marked down 15%.

Two-Step Method:

$$200\,(.85) = 170$$

$$170\,(1.0675) = \$181.48$$

One-Step Method:

$$200\,(.85)(1.0675) = \$181.48$$

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