

22/20

Sales Tax / Discount

can use percentage to calculate discounts and sales tax.

Sales discount: taking off part of the price of an item

↓
subtract

Ex item: tent cost: \$90 discount: 25%

amount of the discount:

$$\frac{\cancel{25}}{\cancel{100}} = \frac{\cancel{x}}{\cancel{90}}$$

$$100x = 25 \cdot 90$$

$$100x = \frac{2250}{100}$$

discount: 22.50

$$x = \$22.50$$

sale price:

$$100\% - 25\% = 75\%$$

$$90 - 22.50 = \boxed{\$67.50}$$

is there a short cut?

if you don't want to subtract, you can find out how much % is remaining after the discount and multiply that by the cost

Ex discount: 25% remaining: 75%

$$\frac{\cancel{75}}{\cancel{100}} = \frac{\cancel{x}}{\cancel{90}}$$

$$100x = 75 \cdot 90$$

$$100x = \frac{6750}{100}$$

$$\boxed{x = 67.50}$$

Watch: $\frac{90}{100} = \frac{x}{50}$

Sales tax: a % increase on the purchased items
↑
added

EX watch: \$45 on sale tax: 6%

Method 1 find tax then add

$$\frac{6}{100} = \frac{x}{45}$$

$$6 \cdot 45 = 270 \div 100 = 2.70$$

↑
tax

$$100\% + 6\% = 106\%$$
$$45 + 2.70 = \boxed{47.70}$$

Method 2 $100\% + \underline{\quad\quad}\%$ is your ratio
gets rid of adding at the end

$$\frac{106}{100} = \frac{x}{45}$$

$$106 \cdot 45 = 4770 \div 100 = \boxed{47.70}$$