

PERCENTAGE MARKUPS AND DISCOUNTS ON PRICES

PERCENTAGE OF A MARKUP = 100/100 *PLUS* THE PERCENTAGE
MARKUP OF $X/100$

for example, a markup of 15% is shown as 115/100
 a markup of 20% is shown as 120/100
 a markup of 30% is shown as 130/100
 a markup of 180% is shown as 280/100

PERCENTAGE OF A DISCOUNT = 100/100 *MINUS* THE PERCENTAGE
DISCOUNT OF $X/100$

for example, a discount of 15% is shown as 85/100
 a discount of 20% is shown as 80/100
 a discount of 30% is shown as 70/100
 a discount of 90% is shown as 10/100

ONCE WE HAVE IDENTIFIED THE PERCENTAGE, WE SET IT EQUAL AS A PROPORTION TO THE:

NEW PRICE

OLD PRICE

FOR EXAMPLE: IF AN ITEM CURRENTLY SELLS FOR \$80 AND WAS MARKED UP BY 30%, WHAT WAS THE ITEM'S ORIGINAL PRICE (where n is the original price)?

$$\frac{130}{100} = \frac{80}{n}$$

$$100 \times 80 = 130n$$

$$8000 = 130n$$

divide both sides by 130

$$n = 8000/130 = \$61.54$$

*remember, if the word problem gives you the original price and asks for the new price after the markup, the n variable goes in the numerator and the original price in the denominator.

FOR EXAMPLE: IF AN ITEM CURRENTLY SELLS FOR \$140 AND WAS DISCOUNTED BY 18%, WHAT WAS THE ITEM'S ORIGINAL PRICE (where n is the original price)?

$$\frac{82}{100} = \frac{140}{n}$$

$$100 \times 140 = 82n$$

$$14,000 = 82n$$

divide both sides by 82

$$n = 14,000/82 = \$170.73$$

*remember, if the word problem gives you the original price and asks for the new price after the discount, the n variable goes in the numerator and the original price in the denominator.