3 - 7
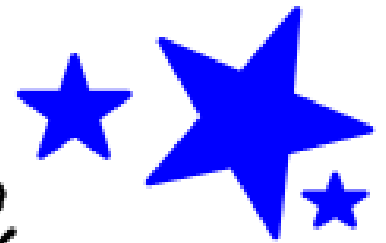# Percent of Change

percent of change: an increase or a decrease represented by a %
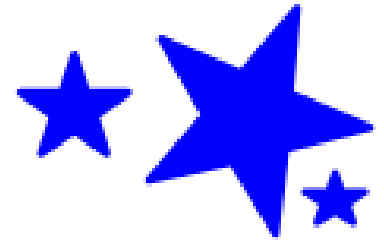
% of increase: new > original

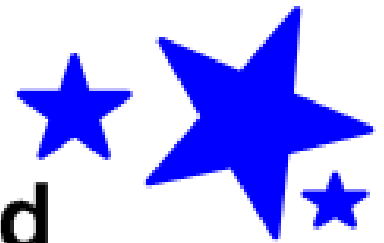**% of decrease:** new < original

How do we find this??

$$\frac{change}{original} = \frac{r}{100}$$

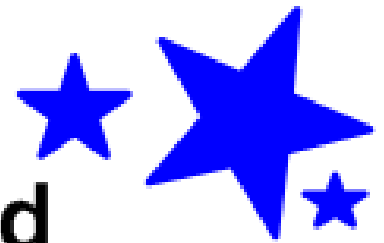**State whether each is a percent of increase or decrease. Then find each percent of change.**

Ex: original: 25   *increase*
      new: 28

$$\frac{3}{25} = \frac{r}{100}$$

$$\frac{25r}{25} = \frac{300}{25}$$

$r = 12\%$

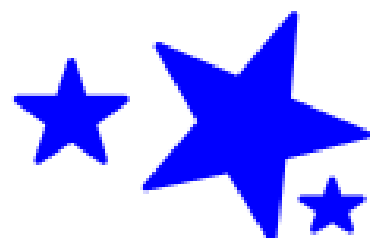**State whether each is a percent of increase or decrease. Then find each percent of change.**

Ex: original: 30
new: 12

decrease

$$\frac{18}{30} \times \frac{r}{100}$$
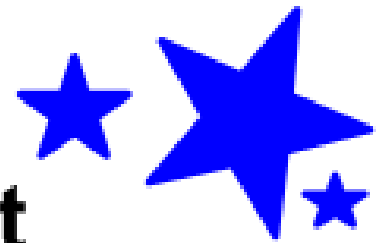
$$\frac{30r}{30} = \frac{1800}{30}$$

$$\boxed{r = 60\%}$$

Ex: NFL fields are 120 yd long.
CFL fields are 25% longer.
What is the length of a CFL field?

$$\frac{\ell - 120}{120} = \frac{25}{120}$$

$$100\ell - 12,000 = 3,000$$
$$+ 12,000 \qquad + 12,000$$
$$\frac{100\ell}{100} = \frac{15,000}{100} \qquad \boxed{\ell = 150 \text{ yd}}$$

Ex: A concert ticket costs $45. If the sales tax is 6.25%, what is the total cost of the ticket?

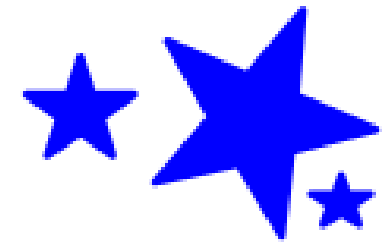$$45 + 2.81 = \boxed{\$47.81}$$

6.25% of 45

$$.0625 \cdot 45 = 2.8125$$

Ex: A sweater is on sale for 35% off the original price. If the original price of the sweater is $38, what is the discounted price?

$$38 - 13.30 = \boxed{\$24.70}$$

35% of 38

$$.35 \cdot 38 = 13.3$$

Homework:

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