

Four men were shipwrecked on an island. Having no food, they went to work gathering pineapples. After gathering pineapples, they were tired and all fell asleep. After another while, one of the men awoke and was very hungry so he ate  $\frac{1}{3}$  of the pineapples - more than his proper share. He then went back to sleep. The second man awoke and being hungry, ate  $\frac{1}{3}$  of the remaining pineapples and went back to sleep. The third man did the same. When the fourth man awoke, he took only his rightful share of the remaining pineapples. Then there were 6 pineapples left. How many pineapples did the men gather?

6 is  $\frac{3}{4}$  of what?

8 is  $\frac{2}{3}$  of 12

12 is  $\frac{2}{3}$  of 18

18 is  $\frac{2}{3}$  of 27

Objective: TSWBAT use equations to solve percent problems

# 3 Types of Percent Problems

What is 40% of 8? 16 is 25% of what? What Percent of 40 is 5?

$$\downarrow$$
$$x = .40 \cdot 8$$

$$x = 3.2$$

↑  
Part

$$16 = .25 \cdot N$$
$$\begin{array}{r} \overline{.25} \quad \overline{.25} \\ \cdot 25 \quad \cdot 25 \end{array}$$

$$64 = N$$

↑  
Whole

$$N\% \cdot 40 = 5$$

$$\begin{array}{r} \overline{40} \quad \overline{40} \\ 40 \quad 40 \end{array}$$

$$N = 0.125$$

$$N = 12.5\%$$

↑  
Percent

Suppose you work at a computer store. You earn 5 percent commission on everything you sell. How much do you earn on a computer you sell for \$1900?

What is 5% of 1900?

$$N = .05 \cdot 1900$$

$$N = \$95$$

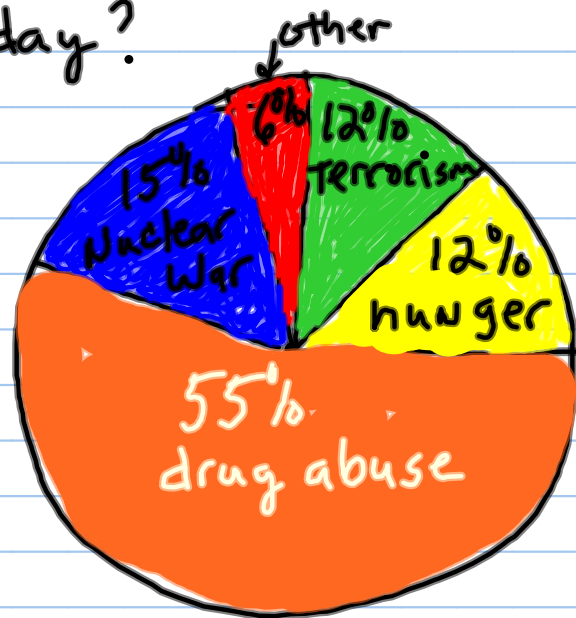
John sells cars. He earns  $\$145/\text{wk}$  in salary plus 8% commission. In one week he sells  $\$36,000$  worth of cars. How much does he earn?

What is 8% of 36,000?

$$N = .08 \cdot 36,000$$

$$N = 2,880 + 145 = 2,925$$

What do you think is the number one problem in the world today?



In this survey, 1650 students said that drug abuse is the number one problem. How many students were surveyed?

How many students said nuclear war?

1650 is 55% of what?

$$1650 = .55 \cdot N$$

$$3,000 = N$$

15% of 3,000 is what

$$.15 \cdot 3000 = N$$

$$450 = N$$

Suppose your school requires 36 hours of community service. You spent 56 hours volunteering at a hospital. What percent of the requirement have you fulfilled?

56 is what percent of 36?

$$\frac{56}{36} = N\% \cdot \frac{36}{36}$$

$$N\% = 1.55\bar{5}$$

$$N = 156\%$$

## Simple Interest Formula

$$I = prt$$

$I$  is the interest

$p$  is the principal

$r$  is the interest rate per year

$t$  is the time in years

Suppose you invested \$900 for two years. You earned \$67.50 in simple interest. What was the annual rate of interest?

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$$I = prt$$

$$\frac{67.50}{1800} = \frac{900 \cdot (r) 2}{1800}$$

$$0.0375 = r$$

$$3.75\% = r$$

Find the simple interest on \$550 at 4.5% for one year.

$$I = prt$$
$$I = (550)(.045)(1)$$
$$I = 24.75$$