

T102 SECTION 6.5 PERCENTS

I. INTRODUCTION

The word “percent” comes from the Latin phrase “per centum” which means “per hundred”.

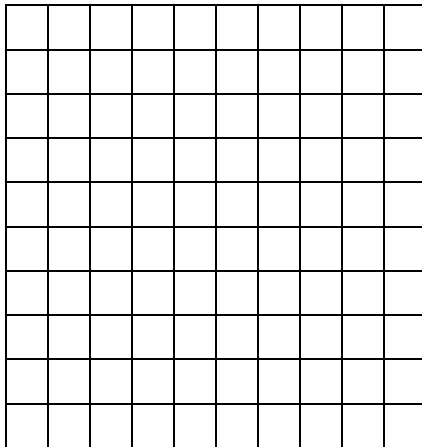
For instance, if you invest your money at an interest rate of 6%, this means that the bank pays you \$6 for every \$100 you invest.

DEFINITION OF PERCENT

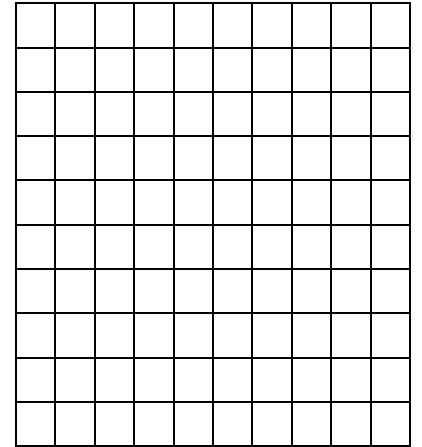
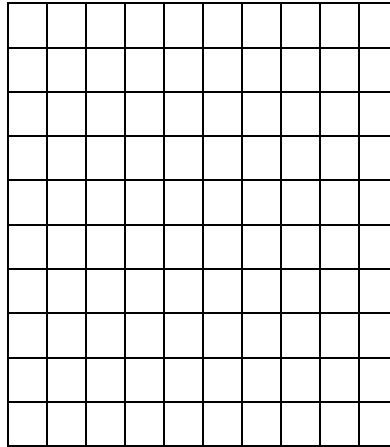
$$n\% = \frac{n}{100}$$

Examples: Shade the hundreds grid(s) to represent each percent.

52%



110%



Since $n\% = \frac{n}{100}$, then $19\% = \frac{\quad}{100}$ $42\% = \frac{\quad}{100}$

$3.5\% = \frac{\quad}{100}$ $200\% = \frac{\quad}{100}$

$= \frac{\quad}{100}$

$= \frac{\quad}{100}$

$= \frac{\quad}{100}$

II. CONVERTING BETWEEN PERCENTS, DECIMALS AND FRACTIONS

A. DECIMAL TO A PERCENT

(hint: Multiply by 100 – move the decimal point _____ places to the _____)

.27

.035

1.3

$\overline{.6}$

1

4.5

B. FRACTION TO A PERCENT

(hint: Change the denominator to 100 using proportion)

$\frac{1}{2}$

$\frac{2}{3}$

$2\frac{1}{7}$

C. PERCENT TO A DECIMAL

(hint: Divide by 100 – move the decimal point _____ places to the _____)

7%

6.1%

100%

250%

$\frac{1}{3}\%$

$66\frac{2}{3}\%$

III. APPLICATIONS

There are 3 basic types of percent problems. All 3 are based on the notion that:

“a **P**ercent of a whole **Q**uantity is some **N**umber”
$$p \cdot q = n$$

1. Find the percent of a number. (What is 30% of 200? Find _____)
2. Find what percent one number is of another. (What percent of 200 is 60? Find _____)
3. Find a number when a percent of that number is known.
(30% of how much is 60? Find _____)

Examples:

A house that sells for \$92,000 requires a 20% down payment. What is the amount of the down payment?

If Al has 45 correct answers on an 80-question test, what percent of his answers are correct?

Forty-two percent of the parents of the school children in the New Albany School District are employed at IUS. If the number of parents employed by IUS is 168, how many parents are there in the school district?

Kelly bought a bicycle and a year later sold it for 20% less than what she paid for it. If she sold the bike for \$144, what did she pay for it?

A men's store advertised a suit for 10% off for a savings of \$15. Later, the manager marked the suit at 30% off the original price. What is the amount of the current discount?

IV. PERCENT OF INCREASE OR DECREASE

This means: "The increase (or decrease) amount is what percent of the original quantity?"

The price of a new car was reduced from \$20,000 to \$18,000. What was the percent of the decrease?

In order to make more money, the Girl Scouts increased the price of cookies from \$3.00 to \$3.50 per box. What was the percent of the increase?

V. MENTAL MATH

A. Use a FRACTIONAL EQUIVALENT

%	10%	25%	50%	75%	$33\frac{1}{3}\%$	$66\frac{2}{3}\%$	100%	200%
Fraction								

Example: 50% of 40 =

$66\frac{2}{3}\%$ of 90 =

B. Use a KNOWN PERCENT

Example: 30% of 48

1. (THINK! $30\% = 25\% + 5\%$)

2. (THINK! $30\% = 3$ “times” 10%)

VI. ESTIMATION

We use estimations to determine whether answers are reasonable

Examples: 53% of 295

148% of 500

Laura wants to buy a blouse originally priced at \$26.50 but now on sale at 40% off. She has \$17.00 in her wallet and wonders if she has enough cash. How can she mentally find out?

Try EXAMPLE 6-23, PAGE 416