04-08-26 MDE 10

5.3 Percents and Fractions
5.3 Exercise Set, page 348: 1, 5, 7, 17, 21, 29, 59

5.4 Solving Percent Problems Using Equations
5.4 Exercise Set, page 357: 1, 5, 9, 19, 27, 67

5.5 Solving Percent Problems Using Proportions
5.5 Exercise Set, page 365: 1, 5, 9, 15, 57, 65

5.6 Applications of Percent
5.6 Exercise Set, page 375: 1, 5, 19, 33
Chapter 8 - Real Numbers and Introduction to Algebra
8.1 Symbols and Sets of Numbers
8.1 Exercise Set, page 562: 1, 5, 11, 21, 25, 39, 67

5.4: 67

For each exercise, determine whether the number, n, is ***(a)*** *equal to 45,* ***(b)*** *greater than 45, or* ***(c)*** *less than 45.*

67. 55% of 45 is n

$n = 55(.01)(45)$

$= (.55)(45)$

$\approx (.6)(50)$

$= 30 < 45$

5.4:19

19. $8\frac{1}{2}\%$ of what number is 51?

$(8\frac{1}{2})(\frac{1}{100})x = 51$ Let x = the number

$12x = 51$

$$\frac{17}{200}x = 51$$

$$x = \frac{(51)(200)}{17}$$

$$x = \frac{(17)(3)(200)}{17}$$

$$\boxed{x = 600}$$

8 1/2 % of 600 is 51

5.5

Percent Proportion

$$\frac{\text{amount}}{\text{base}} = \frac{\text{percent}}{100} \quad \leftarrow \text{always } 100$$

or

$$\begin{matrix}\text{amount} \rightarrow \\ \text{base} \rightarrow\end{matrix} \frac{a}{b} = \frac{p}{100} \quad \leftarrow \text{percent}$$

Part of Proportion	How It's Identified
Percent	% or percent
Base	Appears after *of*
Amount	Part compared to whole

The main issue of this section is to translate the problem into a proportion.

5.6
Memorize

Percent of Increase

Percent of Increase

$$\text{percent of increase} = \frac{\text{amount of increase}}{\text{original amount}}$$

Then write the quotient as a percent.

Memorize

Percent of Decrease

$$\text{percent of decrease} = \frac{\text{amount of decrease}}{\text{original amount}}$$

Then write the quotient as a percent.

Assume monthly pay check of $1800
We have a 10% decrease.
What is our new salary?

what is 10% of $1800

$x = 10\left(\frac{1}{100}\right)(\$1800)$

$x = (10)(\$18)$

$x = \$180$

New salary = $1800 − $180 = $1620

11% raise

10% raise

$10\%(\$1620)$

$= 0.1(\$1620)$

$= \$162$

new salary after raise

$= \$1620$

$+ \ 162$

$\$1782$

8.1

Memorize

Natural numbers

$\{1, 2, 3, 4, 5, 6, \ldots\}$

Whole numbers

$\{0, 1, 2, 3, 4, 5, 6, \ldots\}$

Order Property for Real Numbers

For any two real numbers a and b, a is less than b if a is to the left of b on a number line.

$a < b$ or also $b > a$