2.9 Percents

* Percent Proportion $\frac{a}{b} = \frac{\%}{100}$, where $b \neq 0$

$\frac{\text{part}}{\text{base}} = \frac{\%}{100}$ [or] [or] $\frac{\text{is}}{\text{of}} = \frac{\%}{100}$

* Review Got it? #1

$\frac{54}{90} = \frac{\%}{100}$

$54(100) = 90x$

$5400 = 90x$

$x = 60\%$

* Percent Equation

$\frac{a}{b} = \frac{\%}{100}$ is rewritten as $a = \% \cdot b$

* Review Got it? #2

$\frac{a}{b} = \frac{\%}{100}$

$a = \% \cdot b$ or

$\frac{63}{84} = \frac{x}{100}$

$\frac{63 = \% (84)}{84}$

$x = 75\%$

$\% = 75$

* Review Problem #3 & Got it #3 on pg. 139

Got it #3)

$$\frac{x}{9{,}000} = \frac{40}{100}$$

$$9{,}000(40) = 100x$$
$$360{,}000 = 100x$$
$$x = \$3{,}600$$

* Review Problem #4 & Got it #4 on pg. 139

Got it #4)

$$\frac{12.5}{x} = \frac{30}{100}$$

$$12.5(100) = 30x$$
$$1250 = 30x$$
$$x = 41\frac{2}{3}$$

Simple Interest Formula

$I = Prt$

- I: Interest ($)
- P: Principal ($): Inital amount
- r: Rate (written as a decimal)
- t: Time (years)

* Review Problem 5 on pg. 140
  (See common % on pg. 140)

* Got it? #5

$$I = Prt$$
$$\$8.75 = \$125(0.0175)t$$
$$8.75 = 2.1875t$$
$$\frac{8.75}{2.1875} = \frac{2.1875t}{2.1875}$$
$$t = 4 \text{ years}$$

Algebra Chapter 2.9: Simple Interest

Keep

Formula: I = prt

1) What is the interest on $8,000 that is invested at 6% for 3.5 years? Round to the nearest cent.

$I = 8,000(0.06)(3.5)$

$I = \$1,680$

2) How long will it take to earn $252 in interest if $2,400 is invested at a 7% annual interest rate?

$252 = 2,400(0.07)t$

$252 = 168t$

$t = 1\frac{1}{2}$ years

3) What is the annual interest rate is $1,600 is invested for 6 years and $456 in interest is earned?

$456 = 1600(6)r$ if

$456 = 9600r$

$0.0475 = r$

4.75%

4) How much money did you have in your account, if you earned $195 in interest, at a rate of 6.5% over 2.5 years?

$195 = P(0.065)(2.5)$

$195 = 0.1625P$

$P = \$1,200$

Algebra Chapter 2.9: Simple Interest

Formula: I = prt

1) What is the interest on $8,000 that is invested at 6% for 3.5 years? Round to the nearest cent.

2) How long will it take to earn $252 in interest if $2,400 is invested at a 7% annual interest rate?

3) What is the annual interest rate is $1,600 is invested for 6 years and $456 in interest is earned?

4) How much money did you have in your account, if you earned $195 in interest, at a rate of 6.5% over 2.5 years?

2.9 pg. 141 #21, 22, 32-36 even, 42-50 even

(21) $\frac{x}{65} = \frac{20}{100}$

$x = \$13$ off

$52 for the racket

(22) $\frac{x}{4.50} = \frac{40}{100}$

$40(4.50) = 100x$

$x = 1.8$

$4.50 + 1.80 = \$6.30$

(29) $I = Prt$

$I = 1200(0.03)3$

$I = \$108$

(30) $I = Prt$

$I = 150(0.055)4$

$I = \$33$

(32) $\frac{96}{36} = \frac{x}{100}$

$x = 266\frac{2}{3}\%$ percent

(34) $\frac{x}{64} = \frac{175}{100}$ part

$\$51$

$x = 112$

(36) $\frac{60}{x} = \frac{250}{100}$ base

$x = 24$

(42) B

(44) A

(46) No; it would cost more to produce then selling it. You would never make a profit.

(50) $990 24/45 = $1080

$$\frac{1080}{990} = \frac{x}{100}$$

$x = 109\%$

(51) $12 \times 4 = 48$ squares

14 odd squares

$$\frac{14}{48} = \frac{x}{100}$$

$x = 29\frac{1}{6}\%$