7-5 Using Percent Equation

A percent equation is an equivalent form of the percent proportion in which the percent is written as a decimal.

part
whole $\cdot$ $\dfrac{is}{of} = \dfrac{\%}{100}$ Proportion   %   25% = 0.25

Find 62% of 75

$n = 0.62(75)$

$n = 46.5$

Equation
$\dfrac{is}{of}$ = x

1A.) find 60% of 96   1B.) find 45% of 70

$n = 0.6 (96)$ $n = 0.45 (70)$

$n = 57.6$ $n = 31.5$

Example 2

287 is what percent of 410

$$\frac{287}{410} = \frac{p(410)}{410}$$

$$0.7 = \boxed{p}$$

$$0.70 = 70\%$$

2A.)

15 is what percent of 125

$$\frac{15}{125} = p\frac{(125)}{125}$$

$0.12 = P$

$0.12 = \boxed{12\%}$

2B.)   20 is what percent of 400

$$\frac{20}{400} = p\frac{(400)}{400}$$

$0.05 = P$

$0.05 = \boxed{5\%}$

3.)   33 is 55% of what number?

$$\frac{33}{0.55} = \frac{0.55 \, n}{0.55}$$

$$60 = n$$

3A.) 18 is 30% of what number?

$$\frac{18}{0.3} = \frac{0.3n}{0.3}$$ *equation*

$$\boxed{60 = n}$$

3B.) 79 is 80% of what number

$$\frac{79}{08} = \frac{0.8n}{0.8}$$ $\frac{D}{\cdot 0.8} \frac{u}{\div 0.8}$

$$\boxed{98.75 = n}$$

4.) $175,000 \; (\overset{24\%}{\underline{0.24}}) = \text{profit}$

$42,000 = p$

Method 1

$175,000.00$
$+ \; 42,000.00$
_____
$217,000.00$

Method 2

$175,000.00 \boxed{\overset{1.00}{+100\%} \; \overset{0.24}{+24\%}} = \text{total}$

$175,000 \, (\underline{1.24}) = {}^{\$}217,000$

5.)

$$\frac{\$47.70}{45} = \frac{45\,p}{45}$$

$$1.06 = percent$$

Method 2

$$1.06 = \boxed{100\%} \ or \ 1 + 6\% \ or \ \boxed{0.06} \ for \ 1.06$$

$$the \ percent = \underbracket{6\%} \ (0.06)$$

Method 1

$$\begin{array}{r} \$\,47.70 \\ -45.00 \\ \hline \$\ 2.70 \ tax \end{array}$$

$$\frac{\$2.70}{45} = \frac{45\,p}{45}$$

$$\boxed{\begin{array}{c} 0.06 = p \\ 6\% \end{array}}$$

P. 360
  # 7 and # 8

7.
  $95(0.2) = n$ or

  $\underline{19 = n}$

  20% more than last yr

  $95 + 19 = \boxed{114 \text{ boxes}}$

100% + 20%

$95\boxed{(1.2)} = n$

$\boxed{114 = n}$
boxes

#8.)

$$\begin{array}{r} 5290.92 \\ - 4968.00 \\ \hline \$322.92 = tax \end{array}$$

$$\$\frac{322.92}{4968} = \frac{4968}{4968} P$$

$$0.065 = P$$

$$\boxed{6.5\%} \quad C$$

or

$$+\frac{5290.92}{4968.00} = \boxed{1.065}$$

$$100\% + \underline{0.065} = 6.5\% \text{ mark up}$$
$$6.5 \qquad\qquad tax$$