Math 107
Fall 2016
Lecture 3

Ch. 2 Basic Percent

1) By Translation
2) By proportion

What, what number $\rightarrow x$
$P \%$, what percent $\rightarrow \frac{P}{100}$
Percent of,
$P \%$ of $\quad \rightarrow$.
is, get, become, ... $\rightarrow=$
$a$ of $b \rightarrow \frac{a}{b}$

What is $18 \%$ of 400 ?

$$
\begin{aligned}
& x=\frac{18}{100} \cdot \frac{4}{400} \\
& x=18.4 \\
& x=72
\end{aligned}
$$

$4 \%$ of what number is 180?

$$
\begin{aligned}
& \frac{4}{100} \cdot x=180 \rightarrow x=\frac{180}{.04} \\
& 4 \text { optional } \\
& .04 x=180 \\
& \text { Solve } \begin{array}{l}
x=4500
\end{array}
\end{aligned}
$$

$\underbrace{\text { what percent }}$ of 360 is 72?

$$
\left[\frac{P}{100}\right] \cdot 360=72
$$

100 optitoal

$$
\begin{aligned}
\frac{36}{\frac{360}{100}} p=72 \Rightarrow & \frac{36}{10} p
\end{aligned}=72
$$

$20 \%$ of 360 is 72 .

What is $0.5 \%$ of 240,000?

$$
\begin{aligned}
& x \stackrel{\#}{=} \frac{.5}{100} \cdot 240000 \\
& x=.5(2400) \quad x=1200
\end{aligned}
$$

1200 is $.5 \%$ of 240,000

.125 $x=1000 \begin{array}{r}\rightarrow x=\frac{1000}{.125} \\ x=8000\end{array}$
$12.5 \%$ of 8000 is 1000


What percent is 12 of 60 ?

$$
\frac{P}{100}=\frac{12}{60}
$$

$a$ of $b$

$$
\Rightarrow \frac{a}{b}
$$

To Solve this, Cross-multiply

$$
60 p=100(12)
$$

12 of 60 is $20 \%$

Kobe made 18 of 25 Free throws. $a$ of $b$ completion? what is his percentage of completion?
What percent is 18 of 25?

$$
\begin{aligned}
\frac{P}{100}-\frac{18}{25} \quad 25 P & =100(18) \\
P & =\frac{1800}{25} \quad P=72
\end{aligned}
$$

Ch. 3 proportion
when two ratios are equal Fractions
To Solve proportion $\Rightarrow$ Cross-Multiply 4 cups of sugar for 25 muffins.
How many cups of sugar for 120 muffins?

Catch 20 fish $\rightarrow$ tag them all
later, Catch 15 fish, 6 had tags.

$$
\begin{aligned}
\frac{6 \text { tags }}{15 \text { fish }}=\frac{20 \text { tags }}{x \text { fish }} & \frac{6}{15}=\frac{20}{x} \\
50 \text { fish in } & 6 x=15(20) \\
\text { The lake } & 6 x=300 \\
& x=50
\end{aligned}
$$

You Plan tu go to Vegas on the map, it is 18 inches far from here. find the actual distance?
2.5 inches $\Rightarrow 30$ miles
$\frac{2.5 \text { inches }}{30 \text { miles }}=\frac{18 \text { inches }}{x \text { miles }}$

$$
\begin{aligned}
& \frac{2.5}{30}=\frac{18}{x} \\
& 2.5 x=30(18) \\
& 2.5 x=540 \\
& x=\frac{540}{2.5} \\
& x=216
\end{aligned}
$$

If You did not turn in ch.1,
Do it by Monday
work on Ch. 2 غ ch. 3
GO Cowboys

