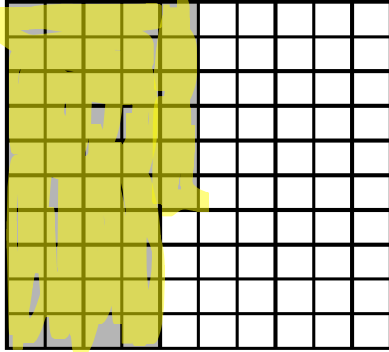# Introduction to Percents

1. Percent: _A ratio that compares a number to 100._

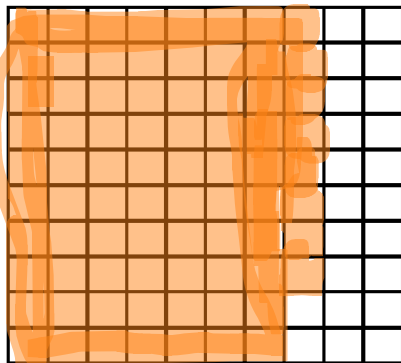2. It is a part-to-whole ratio where the whole is __100__.

3. You can write the ratio 25 to 100 as __25%__.

4. Look at the figure below. It contains 100 squares. Write a ratio and percent to describe the shaded part.

Ratio:	Percent:
$\frac{46}{100}$ 46:100 46 to 100	46%

5. Use the figure below to model 78%. Write the ratio represented by the model.

Ratio:
$\frac{78}{100}$ 78:100   78 to 100

Percent: 78%

6. You can use percents to describe __ratios__ out of 100.

7. 80 out of 100 students play a sport. What percent of students play a sports? What percent of students do not play sports?

$\frac{80}{100}$ play = 80% $\frac{20}{100}$ = don't play = 20%

8. 25 out of 100 of Mrs. Lopez's books are mystery books. What percent of her books are mystery books? What percent of books are not mystery books?
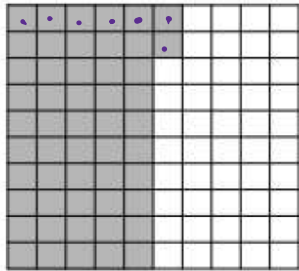
25% are mystery   75% are not mystery

Practice: Introduction to Percents
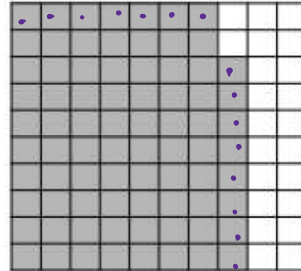
Name:_____   Date:_____

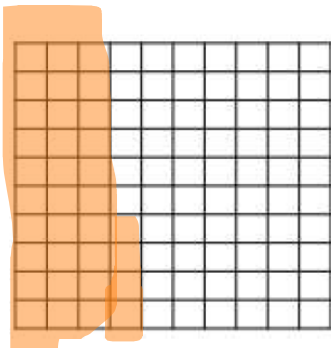**#1 Write a ratio and percent to describe the shaded part.**

$$\frac{52}{100}$$

$$52\%$$

#2 Write a ratio and percent to describe the shaded part.

$$\frac{78}{100}$$

$$78\%$$

#3 Use the figure below to model 34%. Write the ratio represented by the model.

$$\frac{34}{100} = \frac{17}{50}$$

Lowest terms

$$\frac{34 \div 2}{100 \div 2} = \frac{17}{50}$$

#4 Use the figure below to model 2%. Write the ratio represented by the model.
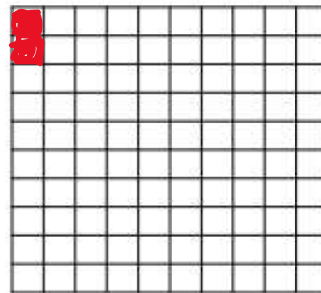
$$\frac{2}{100} = \frac{1}{50}$$

Equivalent ratios

#5 Jessica has a jar of 100 candies. 45 of the candies are chocolates and the rest are peppermints. What percent of the candies are chocolate? What percent are peppermints?

chocolate: $\frac{45}{100} = 45\%$

peppermint: $\frac{55}{100}$

$= 55\%$

#6 Carlo is writing a book. It will have 100 pages. He has written 17 pages so far. What percent of the pages has he written? What percent of the pages does he still have to write?

$$\frac{17}{100} = 17\%$$

$$\begin{array}{r} {}^{0\,9} \\ \cancel{100} \\ -\;17 \\ \hline 83 \end{array}$$

83% Left

Name:_____   Date:_____

Percents & Fractions

1. A percent can be written as a fraction with a denominator of _____100____.

$$\frac{25}{100} = \frac{5}{20}$$

2. To write a percent as a fraction, write the percent over 100, then ____reduce____ the fraction.

What is 25% as a fraction?	What is 80% as a fraction?
$\dfrac{25}{100} \begin{smallmatrix}\div 25 \\ = \\ \div 25\end{smallmatrix} \boxed{\dfrac{1}{4}}$	$\dfrac{80}{100} \begin{smallmatrix}\div 20 \\ = \\ \div 20\end{smallmatrix} \boxed{\dfrac{4}{5}}$

$$\frac{80}{100} = \frac{8}{10}$$

$$\frac{8}{10} = \frac{4}{5}$$

3. The factors of 100 are: $\underline{\begin{matrix}1,100\\2,\ 50\end{matrix}\quad \begin{matrix}4,25\\5,20\end{matrix}\quad 10,10}$

4. When writing a fraction as a percent, if the denominator is a ____factor____ of 100, write an equivalent fraction.

5. Write each fraction as a percent:

$\frac{6}{25} = \boxed{24\%}$	$\frac{4}{5} = \boxed{80\%}$	$\frac{7}{20} = \boxed{35\%}$
$\overset{\times 4}{\frac{6}{25}} = \frac{24}{100}$ $\times 4$	$\overset{\times 20}{\frac{4}{5}} = \frac{80}{100}$ $\times 20$	$\overset{\times 5}{\frac{7}{20}} = \frac{35}{100}$ $\times 5$

6. If the denominator of the fraction is not a factor of 100, ____divide____ the numerator by the denominator.

7. Then multiply the decimal by ___100___ (move the decimal 2 places to the right)

8. Write each fraction as a percent. Round your percent to the nearest tenth if necessary.

$\frac{6}{15}$	$\frac{8}{24}$	$\frac{3}{8}$
$15\overline{\smash{)}6.0}$ $\ .4$ -15 $\overline{\ \ \ 0}$ $.4 = 40\%$	$24\overline{\smash{)}8.000}$ $\ .333$ $-72\downarrow$ $\overline{\ \ 80}$ $-72\downarrow$ $\overline{\ \ 80}$ $.3 = \boxed{33.3\%}$	$8\overline{\smash{)}3.000}$ $\ .375$ $-24\downarrow$ $\overline{\ \ 60}$ $-56\downarrow$ $\overline{\ \ 40}$ -40 $\overline{\ \ \ 0}$ $.375 = \boxed{37.5\%}$

Practice: Percents & Fractions

Name:_____ Date:_____

#1 What is 67% as a fraction?

$$\frac{67}{100}$$

#2 What is a 75% as a fraction?

$$\frac{75}{100} = \boxed{\frac{3}{4}}$$

#3 Write the fraction below as a percent. Round your percent to the nearest tenth if necessary.

$\frac{4}{10}$ → Factor of 100 :)

$$\frac{4}{10} = \frac{40}{100} \quad \boxed{40\%}$$

#4 Write the fraction below as a percent. Round your percent to the nearest tenth if necessary.

$\frac{7}{8}$ → NOT a factor of 100 = divide

$$\begin{array}{r} .875 \\ 8\overline{)7.000} \\ -64\downarrow \\ \hline 60 \\ -56\downarrow \\ \hline 40 \\ 48 \end{array}$$

$$\boxed{87.5\%}$$

#5 Write the fraction below as a percent. Round your percent to the nearest tenth if necessary.

$\frac{6}{50}$ → Factor of 100

$$\frac{6}{50}^{\times 2} = \frac{12}{100} \quad \boxed{12\%}$$

#6 Write the fraction below as a percent. Round your percent to the nearest tenth if necessary.

$\frac{7}{13}$ → NOT a factor of 100

$$\begin{array}{r} .5384 \\ 13\overline{)7.0000} \\ -65\downarrow \\ \hline 50 \\ -39\downarrow \\ \hline 110 \\ 104 \\ 60 \end{array}$$

$$\boxed{53.8\%}$$

#7 Tamara got 22 out of 25 question correct on her last math quiz. What percent of the questions did she get correct?

$$\frac{22}{25}^{\times 4}_{\times 4} = \frac{88}{100} \quad \boxed{88\%}$$

$$\frac{18}{24} = \frac{3}{4} = \boxed{\frac{75}{100}}$$

#8 Amelia receives two dozen roses for her birthday. 18 of the roses are pink. What percent of the roses are pink?

$$\frac{18}{24}$$

$$\begin{array}{r} .75 \\ 24\overline{)18.00} \\ -168\downarrow \\ \hline 120 \\ +120 \end{array}$$

48
48
48

$$\boxed{75\%}$$

$$\frac{18}{24} = \frac{6}{8} = \frac{3}{4}$$

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