



Warm Up Grade 8



1) Fill in the chart

| Percent | Decimal | Fraction |
|---------------------------------|--|---|
| 62.5% $\xleftarrow{\times 100}$ | 0. <u>6</u> <u>2</u> <u>5</u> $\xleftarrow{\text{Top } \div \text{ Both}}$ | $\frac{125 \times 5}{200 \times 5} = \frac{625}{1000}$ |
| 46% $\xleftarrow{\times 100}$ | 0.46 | $\frac{46}{100} = \frac{23}{50}$ |
| 0.35% $\xrightarrow{\div 100}$ | 0.0035 | $\frac{35}{10000} \div 5 = \frac{7}{2000}$ |
| 82% $\xrightarrow{\div 100}$ | 0.82 | $\frac{82}{100} \div 2 = \frac{41}{50}$ |
| 340% $\xleftarrow{\times 100}$ | 3.4 | $\frac{34}{10} = \frac{17}{5} = 3\frac{2}{5}$ $\frac{340}{100} \nearrow$ |

2) What is 12.4% as a fraction?

$$\frac{12.4}{100} \xrightarrow{\times 10} \frac{124}{1000} \xrightarrow{\text{place values}} \frac{124}{1000} = \frac{62}{500} = \frac{31}{250}$$

12.4% \rightarrow 0.124 \rightarrow Decimal

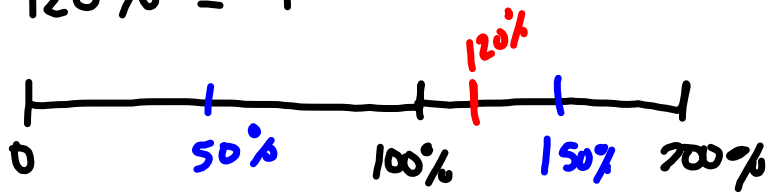
3) What is 0.47% as a decimal?

$$0.47\% \xrightarrow{\div 100} \text{Decimal}$$

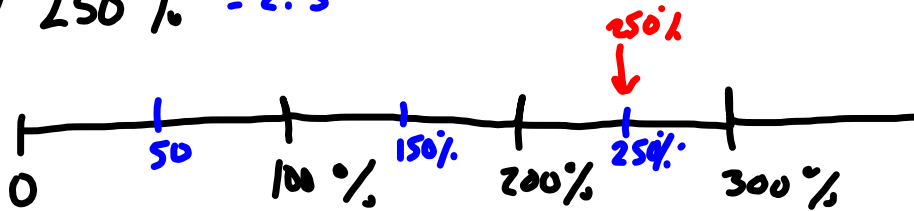
$$0.47\% \rightarrow 0.0047$$

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5) a) $120\% = 1.2$

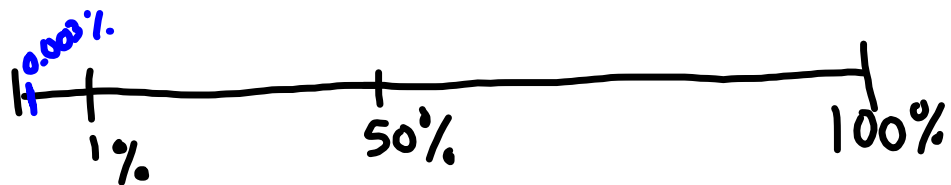


b) $250\% = 2.5$

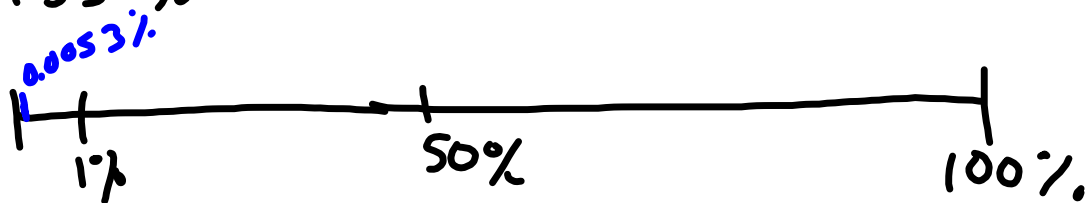


c) $475 = 4.75$

d) $0.3\% = 0.003$



e) $0.53\% = 0.0053$



f) $0.75\% = 0.0075$

#5,6,10, 11

| | $\xrightarrow{\times 100}$ Percent | Fraction |
|-----------|------------------------------------|---|
| a) 1.7 | 170% | $\frac{170}{100} = \frac{17}{10} = 1\frac{7}{10}$ |
| b) 3.3 | 330% | $\frac{330}{100} = \frac{33}{10} = 3\frac{3}{10}$ |
| c) 0.003 | 0.3% | $\frac{3}{1000} =$ |
| d) 0.0056 | 0.56% | $\frac{56}{10000} = \frac{28}{5000} = \frac{14}{2500} = \frac{7}{1250}$ |

$$b) i) \frac{1}{3} = 0.\overline{33} = 33.\overline{3}\%$$

$$ii) \frac{2}{3} = 0.\overline{6} = 66.\overline{6}\%$$

$$iii) \frac{3}{3} = 1 = 100\%$$

$$iv) \frac{4}{3} = 1.\overline{3} = 133.\overline{3}\%$$

$$v) \frac{5}{3} = 1.\overline{6} = 166.\overline{6}\%$$

$$vi) \frac{6}{3} = 2 = 200\%$$

b) As the numerator increases by 1 the percent increases by $33.\overline{3}\%$

$$c) i) \frac{7}{3} = 2\frac{1}{3} = 2.\overline{3} = 233.\overline{3}\%$$

$$ii) \frac{8}{3} = 2\frac{2}{3} = 2.\overline{6} = 266.\overline{6}\%$$

$$iii) \frac{9}{3} = 3 = 300\%$$

$$iv) \frac{10}{3} = 3\frac{1}{3} = 3.\overline{3} = 333.\overline{3}\%$$

$$v) \frac{11}{3} = 3\frac{2}{3} = 3.\overline{6} = 366.\overline{6}\%$$

$$vi) \frac{12}{3} = 4 = 400\%$$

$$1) \text{ a i) } 200\% \text{ of } 360$$

$$\begin{array}{l} \times 2 \left(\begin{array}{l} 100\% \text{ of } 360 = 360 \\ 200\% \text{ of } 360 = 720 \end{array} \right) \times 2 \end{array}$$

$$\text{ii) } 20\% \text{ of } 360$$

$$\begin{array}{l} \times 2 \left(\begin{array}{l} 10\% \text{ of } 360 = 36 \\ 20\% \text{ of } 360 = 72 \end{array} \right) \times 2 \end{array}$$

$$\text{iii) } 2\% \text{ of } 360 =$$

$$\begin{array}{l} \times 2 \left(\begin{array}{l} 1\% \text{ of } 360 = 3.6 \\ 2\% \text{ of } 360 = 7.2 \end{array} \right) \times 2 \end{array}$$

$$\text{iv) } 0.2\% \text{ of } 360$$

$$\begin{array}{l} \times 2 \left(\begin{array}{l} 1\% \text{ of } 360 = 3.6 \\ 2\% \text{ of } 360 = 7.2 \end{array} \right) \times 2 \\ \div 10 \left(\begin{array}{l} 0.2\% \text{ of } 360 = 0.72 \end{array} \right) \div 10 \end{array}$$

b) The digit moves one place to the right each time you decrease your percent by a factor of 10

$$\text{c) } 2000\% \text{ of } 360 = 7200$$

$$\begin{array}{l} \times 10 \left(\begin{array}{l} 100\% \text{ of } 360 = 360 \\ 1000\% \text{ of } 360 = 3600 \end{array} \right) \times 2 \\ \times 2 \left(\begin{array}{l} 2000\% \text{ of } 360 = 7200 \end{array} \right) \times 2 \end{array}$$

$$\text{ii) } 0.02\% \text{ of } 360$$

$$\begin{array}{l} \div 10 \left(\begin{array}{l} 2\% \text{ of } 360 = 7.2 \\ 0.02\% \text{ of } 360 = 0.072 \end{array} \right) \div 100 \end{array} \text{ from above}$$

Estimating and Mentally Calculating Percents

There are several percents that you can figure out without a calculator.

| |
|---|
| 100 % - 100% of a number is the number itself. |
| 50% - You can easily find 50% of a number by dividing the number by 2. Ex. 50% of 68 = 34 |
| 25% - You can easily find 25% of number by dividing the number by 4. Ex. 25% of 64 = 16 |
| 10% - You can easily find 10% of a number by dividing the number by 10. Ex. 10% of 678 = 67.8 <i>(move decimal 1 place left)</i> |
| 1% - You can easily find 1% of a number by dividing the number by 100. Ex. 1% of 52.8 = 0.528 <i>(move decimal 2 places left)</i> |
| 33 1/3 % - You can easily find 33 1/3% of a number by dividing the number by 3. |

So if you can find the above percent, then there are also many, many more that you can find.

How can you find:

- 5% - find 10%, then divide by 2.**
- 20% - Find 10%, then multiply by 2.**
- 30% - find 10% then multiply by 3.**
- 60% - find 10% then multiply by 6.**
- 2% - find 1% then multiply by 2.**
- 4% - find 1% then multiply by 4.**
- 11% - find 10%, find 1% then add the 2 answers**
- 15% - Find 10%, then find 5% then add the 2 answers.**
- 75% - find 25% then multiply by 3.**
- 90% - find 100%, then find 10% and subtract the answers.**
- 55% - find 50%, then find 5% and add the answers.**
- 150% - find 100%, then find 50% and add the answers.**

If you have to estimate a percent, change the percent to the closest number that you can find mentally, or change the number itself to an easy number to work with.

Calculate mentally

| | | | |
|---|---|--|--|
| <p>50% of 430 like $\div 2$ = 215</p> | <p>10% of 187 like $\div 10$ = 18.7</p> | <p>20% of 80 $\times 2$ 10% of 80 = 8 20% of 80 = 16</p> | <p>15% of 70 10% of 70 = 7 5% of 70 = 3.5 <hr style="width: 50%; margin-left: 0;"/>15% of 70 = 10.5</p> |
|---|---|--|--|

| | | |
|---|---|---|
| <p>11% of 52 10% of 52 = 5.2 1% of 52 = 0.52 <hr style="width: 80%; margin-left: 0;"/>11% of 52 = 5.72</p> | <p>15% of 38 10% of 38 = 3.8 5% of 38 = 1.9 <hr style="width: 80%; margin-left: 0;"/>15% of 38 = 5.7</p> | <p>200% of 51 100% of 51 = 51 $\times 2$ 200% of 51 = 102</p> |
|---|---|---|

Class / Homework

Worksheet



Attachments

Math 8 Review of Fraction decimal Percent Day 3 REVIEW WS.docx