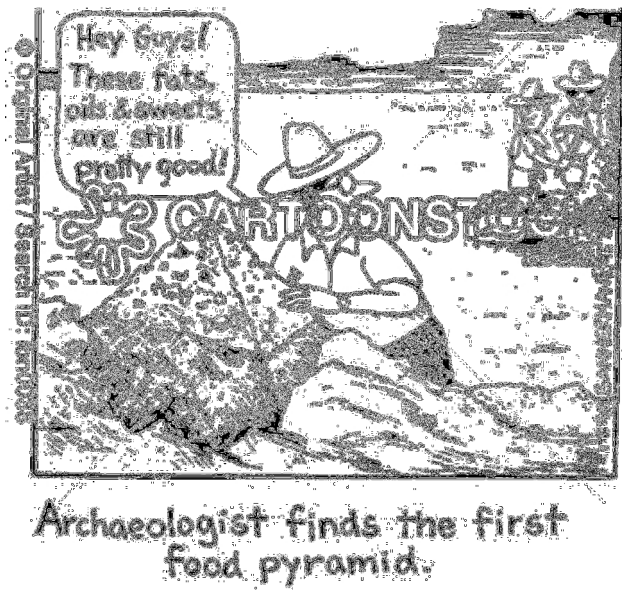


# SIXTH GRADE MATHEMATICS

## CHAPTER 5B

# FOOD AND RESTAURANTS



### TOPICS COVERED:

- ❖ Percentages
- ❖ Fraction, Decimal, Percent Conversions



Percents are a set of fractions that have denominators of 100. What words have the root “cent” which mean 100? Restaurants use percents to determine profits, costs, and loses. Bankers use percents to compute interest. Taxes are determined using percents. In basketball you have a free throw percents, in football quarterbacks complete a certain percent of their passes. Big sales (50% off!) are in percents and even your math grade is a percent!

Percent comes from Latin “per centum.” Per means out of and centum means one hundred. Thus, percent means out of one hundred.

$\frac{23}{100}$  is a fraction that represents 23 out of 100.

0.23 is a decimal that represents 23 out of 100.

23% is a percent that represents 23 out of 100.  $\frac{23}{100} = 0.23 = 23\%$

**Shade in the indicated amount. Then write the fraction as a decimal and a percent.**

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$\frac{12}{100} = \underline{\hspace{1cm}} = \underline{\hspace{1cm}}\%$

$\frac{7}{100} = \underline{\hspace{1cm}} = \underline{\hspace{1cm}}\%$

$\frac{35}{100} = \underline{\hspace{1cm}} = \underline{\hspace{1cm}}\%$

**Shade in the indicated factors. Then write a fraction in lowest terms, a decimal, and a percent.**

Numbers that have 2 as a factor

|    |    |    |    |    |    |    |    |    |     |
|----|----|----|----|----|----|----|----|----|-----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10  |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20  |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30  |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40  |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50  |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60  |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70  |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80  |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90  |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

Numbers that have 3 as a factor

|    |    |    |    |    |    |    |    |    |     |
|----|----|----|----|----|----|----|----|----|-----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10  |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20  |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30  |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40  |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50  |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60  |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70  |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80  |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90  |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

$\frac{\hspace{1cm}}{100} = \underline{\hspace{1cm}} = \underline{\hspace{1cm}}\%$

$\frac{\hspace{1cm}}{100} = \underline{\hspace{1cm}} = \underline{\hspace{1cm}}\%$

Numbers that have 4 as a factor

|    |    |    |    |    |    |    |    |    |     |
|----|----|----|----|----|----|----|----|----|-----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10  |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20  |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30  |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40  |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50  |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60  |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70  |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80  |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90  |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

Numbers that have 5 as a factor

|    |    |    |    |    |    |    |    |    |     |
|----|----|----|----|----|----|----|----|----|-----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10  |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20  |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30  |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40  |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50  |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60  |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70  |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80  |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90  |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

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

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

Numbers that have 8 as a factor

|    |    |    |    |    |    |    |    |    |     |
|----|----|----|----|----|----|----|----|----|-----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10  |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20  |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30  |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40  |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50  |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60  |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70  |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80  |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90  |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

Numbers that have 10 as a factor

|    |    |    |    |    |    |    |    |    |     |
|----|----|----|----|----|----|----|----|----|-----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10  |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20  |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30  |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40  |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50  |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60  |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70  |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80  |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90  |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

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

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

**Model each percent.**

90%

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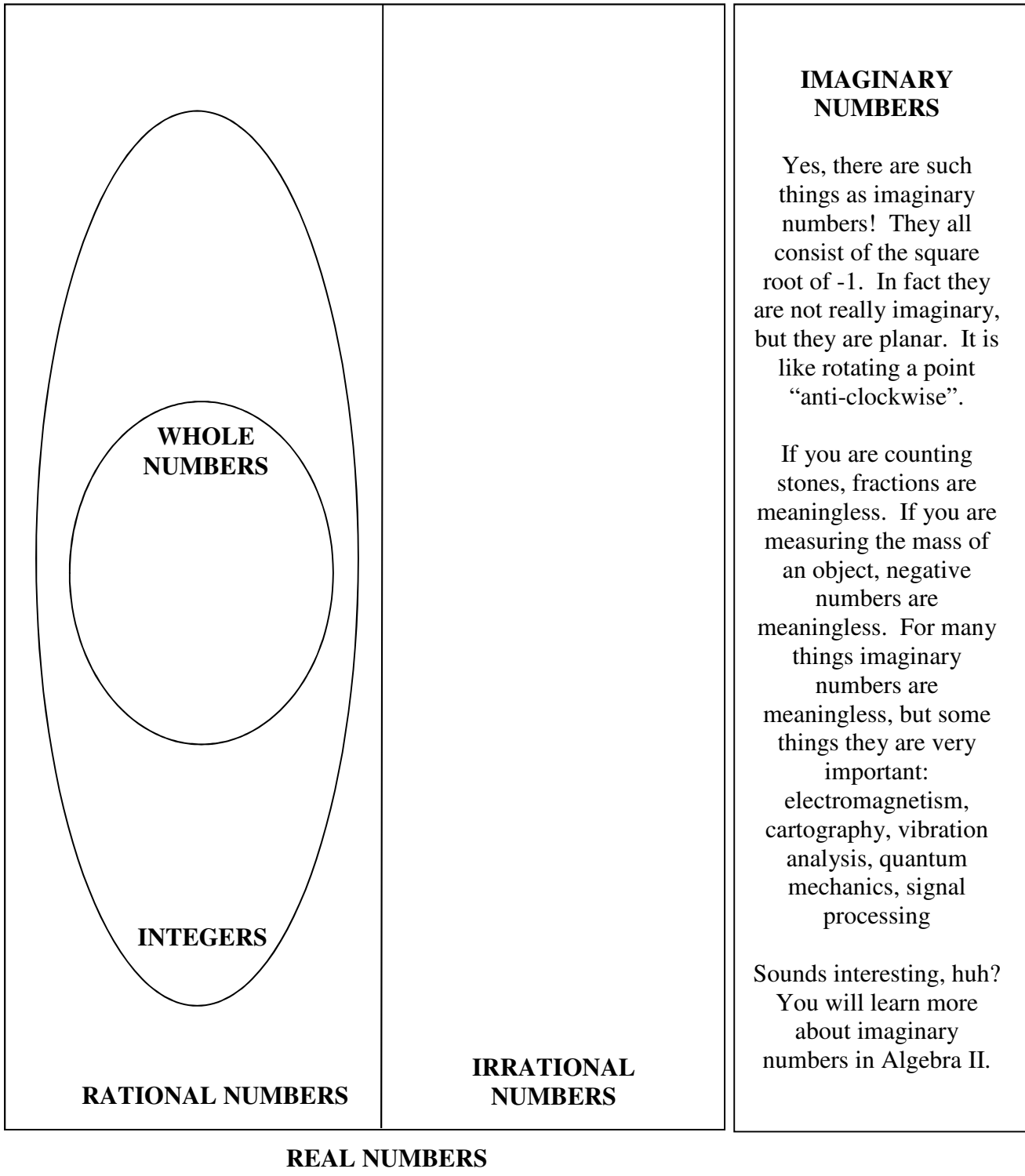
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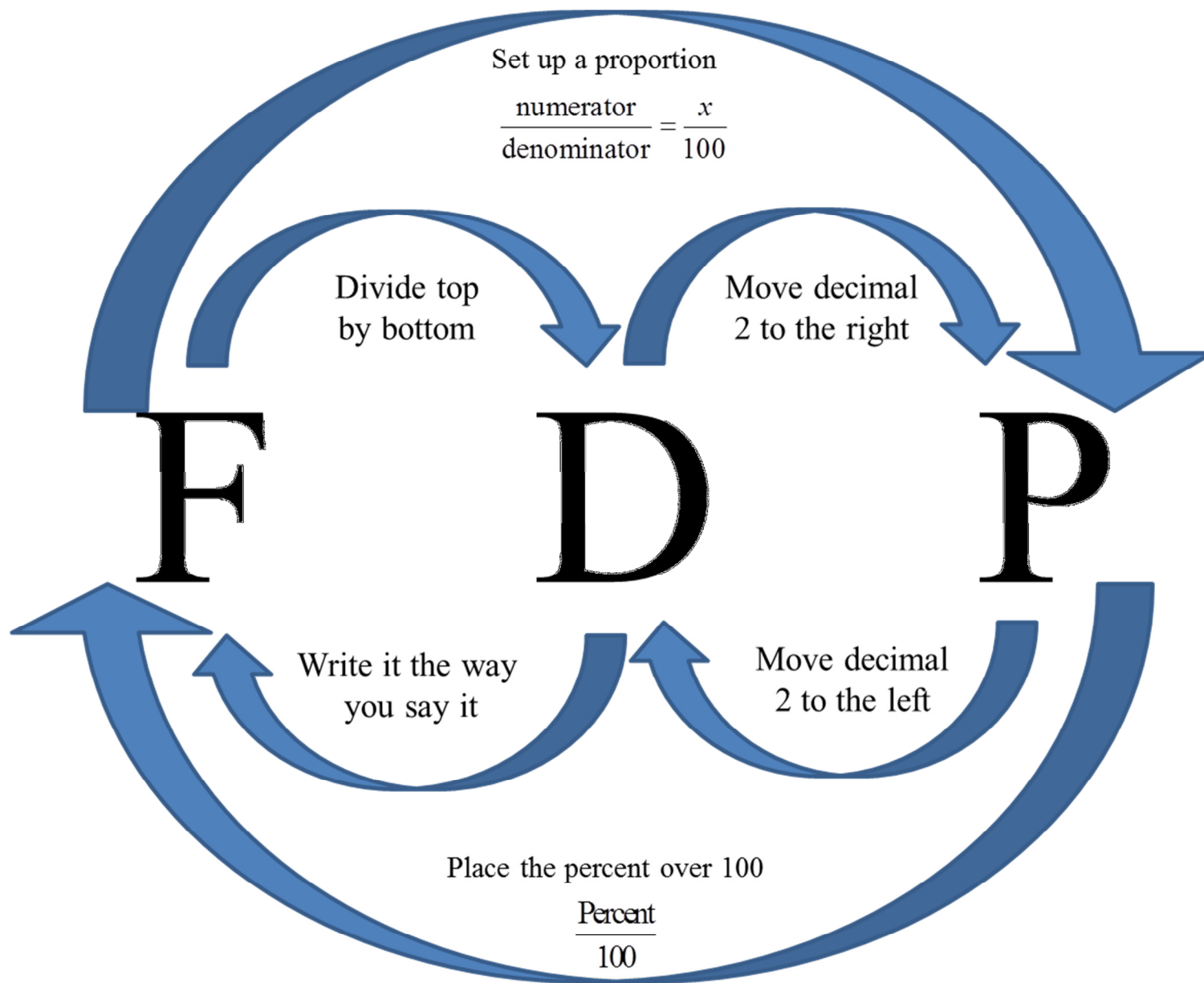
**IMAGINARY NUMBERS**

Yes, there are such things as imaginary numbers! They all consist of the square root of -1. In fact they are not really imaginary, but they are planar. It is like rotating a point “anti-clockwise”.

If you are counting stones, fractions are meaningless. If you are measuring the mass of an object, negative numbers are meaningless. For many things imaginary numbers are meaningless, but some things they are very important:  
 electromagnetism,  
 cartography, vibration  
 analysis, quantum  
 mechanics, signal  
 processing

Sounds interesting, huh?  
 You will learn more about imaginary numbers in Algebra II.

|                            |                            |
|----------------------------|----------------------------|
| <b>Percent to Decimal</b>  | <b>Decimal to Percent</b>  |
| <b>Percent to Fraction</b> | <b>Fraction to Percent</b> |
| <b>Decimal to Fraction</b> | <b>Fraction to Decimal</b> |



**Converting percentages to fractions**

|                              |  |
|------------------------------|--|
| <b>Percent to a fraction</b> | Write the percent number over 100 and simplify   |
|                              | <p><i>Example 1:</i> <math>78\% = \frac{78}{100} = \frac{39}{50}</math></p> <p><i>Example 2:</i> <math>6.2\% = \frac{6.2}{100} \cdot \frac{10}{10} = \frac{62}{1000} = \frac{31}{500}</math></p> |

**Convert the following percents to fractions in simplest form.**



|     |       |  |     |        |  |     |        |  |
|-----|-------|--|-----|--------|--|-----|--------|--|
| 1.  | 84%   |  | 2.  | 35%    |  | 3.  | 7%     |  |
| 4.  | 80%   |  | 5.  | 10%    |  | 6.  | 99%    |  |
| 7.  | 75%   |  | 8.  | 95%    |  | 9.  | 64%    |  |
| 10. | 50%   |  | 11. | 4%     |  | 12. | 28%    |  |
| 13. | 51%   |  | 14. | 91%    |  | 15. | 57%    |  |
| 16. | 33%   |  | 17. | 48%    |  | 18. | 18%    |  |
| 19. | 1.8%  |  | 20. | 15.75% |  | 21. | 0.05%  |  |
| 22. | 12.5% |  | 23. | 1.3%   |  | 24. | 23.46% |  |

**Convert the following percents to fractions in simplest form.**

|     |  |  |
|-----|--|--|
| 25. | Mr. Underwood made 72% of his free throws. What fraction did he make?  |  |
| 26. | Mr. Mangham ate 58% of the Little Debbies in his classroom. What fraction did he eat?  |  |
| 27. | George W. Bush has a 73% approval rating from the American public. What fraction approve of President Bush?                  |  |
| 28. | 64% of Carroll ISD students like french fries. What fraction of students do NOT like french fries?                           |  |
| 29. | 99.8% of all DVD's players have no malfunctions in their first year. What fraction have no malfunctions in their first year? |  |

**Converting percentages to decimals and decimals to percentages**

When converting between percents and decimals, the Dr. Pepper Method serves as a reminder of which way to move the decimal.

|                                |   |
|--------------------------------|---|
| <b>Decimal to a percentage</b> | <p><i>The Dr. Pepper (DP) Method</i></p>  <p>When converting a decimal to a percent, move the decimal point two places to the right.</p> <p>Ex. <math>3.427 = 342.7\%</math></p> |
| <b>Percentage to a decimal</b> | <p><i>The Dr. Pepper (DP) Method</i></p>  <p>When converting a percent to a decimal, move the decimal point two places to the left.</p> <p>Ex. <math>2.4\% = 0.024</math></p>    |

**Convert between the following decimals and percentages.**

|     |       |  |     |       |  |     |       |  |     |         |  |
|-----|-------|--|-----|-------|--|-----|-------|--|-----|---------|--|
| 1.  | 65%   |  | 2.  | 70%   |  | 3.  | 5%    |  | 4.  | 9%      |  |
| 5.  | 15.7% |  | 6.  | 3.4%  |  | 7.  | 0.5%  |  | 8.  | 220%    |  |
| 9.  | 0.05  |  | 10. | 0.3   |  | 11. | 2     |  | 12. | 0.025   |  |
| 13. | 0.525 |  | 14. | 0.005 |  | 15. | 0.09  |  | 16. | 0.6     |  |
| 17. | 3.5   |  | 18. | 1.515 |  | 19. | .25   |  | 20. | 0.00625 |  |
| 21. | 42%   |  | 22. | 18%   |  | 23. | 77%   |  | 24. | 4.2%    |  |
| 25. | 1.8%  |  | 26. | 9%    |  | 27. | 2%    |  | 28. | 5%      |  |
| 29. | 20%   |  | 30. | 50%   |  | 31. | 0.38  |  | 32. | 0.94    |  |
| 33. | 0.75  |  | 34. | 0.094 |  | 35. | 0.075 |  | 36. | 0.04    |  |
| 37. | 0.08  |  | 38. | 55    |  | 39. | 0.8   |  | 40. | 4.1     |  |



|                              |   |
|------------------------------|---|
| <b>Decimal to a fraction</b> | <b>Simply read the decimal the correct way and simplify</b>   |
|                              | <p>Ex. .318 = three hundred eighteen thousandths = <math>\frac{318}{1000}</math></p> $\frac{318}{1000} = \frac{159}{500}$ |

**Write each decimal as a fraction or mixed number in simplest form.**

|     |       |  |     |       |  |     |       |  |
|-----|-------|--|-----|-------|--|-----|-------|--|
| 1.  | 0.2   |  | 2.  | 0.28  |  | 3.  | 0.05  |  |
| 4.  | 0.3   |  | 5.  | 0.06  |  | 6.  | 4.75  |  |
| 7.  | 9.8   |  | 8.  | 0.625 |  | 9.  | 0.45  |  |
| 10. | 3.15  |  | 11. | 7.6   |  | 12. | 0.004 |  |
| 13. | 0.6   |  | 14. | 1.25  |  | 15. | 0.74  |  |
| 16. | 0.29  |  | 17. | 0.635 |  | 18. | 0.8   |  |
| 19. | 6.16  |  | 20. | 0.95  |  | 21. | 0.645 |  |
| 22. | 0.782 |  | 23. | 0.493 |  | 24. | 0.758 |  |
| 25. | 0.33  |  | 26. | 0.47  |  | 27. | 0.04  |  |
| 28. | 0.002 |  | 29. | 0.65  |  | 30. | 0.16  |  |

**Converting fractions to decimals**

|                              |  |
|------------------------------|--|
| <b>Fraction to a decimal</b> | <b>Divide!</b>   |
|                              | <i>Example 1:</i> $\frac{3}{5} = 3 \div 5 = .6$            |
|                              | If the decimal keeps repeating use bar notation.           |
|                              | <i>Example 2:</i> $\frac{2}{3} = 2 \div 3 = \overline{.6}$ |

**Write each repeating decimal using bar notation.**

|    |            |  |    |            |  |    |                |  |
|----|------------|--|----|------------|--|----|----------------|--|
| 1. | 0.22222... |  | 2. | 0.41666... |  | 3. | 0.54545...     |  |
| 4. | 0.6363...  |  | 5. | 0.2727...  |  | 6. | 0.428572428... |  |

**Express each fraction or mixed number as a decimal. Use bar notation to show a repeating decimal.**

|     |                   |  |     |                  |  |     |                  |  |
|-----|-------------------|--|-----|------------------|--|-----|------------------|--|
| 7.  | $\frac{4}{9}$     |  | 8.  | $1\frac{7}{18}$  |  | 9.  | $\frac{5}{7}$    |  |
| 10. | $2\frac{3}{16}$   |  | 11. | $6\frac{1}{12}$  |  | 12. | $\frac{8}{11}$   |  |
| 13. | $9\frac{2}{5}$    |  | 14. | $7\frac{1}{18}$  |  | 15. | $3\frac{24}{25}$ |  |
| 16. | $4\frac{1}{6}$    |  | 17. | $\frac{6}{7}$    |  | 18. | $5\frac{8}{9}$   |  |
| 19. | $8\frac{2}{3}$    |  | 20. | $\frac{5}{16}$   |  | 21. | $\frac{9}{11}$   |  |
| 22. | $10\frac{17}{20}$ |  | 23. | $2\frac{11}{18}$ |  | 24. | $6\frac{2}{7}$   |  |
| 25. | $14\frac{5}{8}$   |  | 26. | $\frac{3}{13}$   |  | 27. | $7\frac{9}{10}$  |  |
| 28. | $\frac{7}{12}$    |  | 29. | $\frac{11}{16}$  |  | 30. | $1\frac{5}{9}$   |  |

Now that we have learned about bar notation with decimals here is a serious problem for you:

How do you write  $0.99999999\dots$  That would be  $0.\overline{9}$ , right?

Well,  $0.9999999\dots$  repeated forever equals what?

**Would you say that number is equal to 1 or that it is less than 1??? Think about it.**

In ordinary math, this number equals one. Does your head hurt yet?

So how can  $.9999\dots=1$ ?

There are many different proofs of the fact that  $0.9999\dots$  does indeed equal 1. So why does this question keep coming up?

Do you agree that  $0.3333\dots$  is equal to  $\frac{1}{3}$ ?

Remember  $0.9999\dots$  doesn't mean "0.9" or "0.99" or "0.9999" or "0.999 followed by some large but finite (limited) number of 9's".  $0.9999\dots$  never ends. There will *always* be another "9" to tack onto the end of  $0.9999\dots$ . So don't object to  $0.9999\dots = 1$  on the basis of "however far you go out, you still won't be equal to 1", because there is no "however far" to "go out" to; you can *always* go further. "But", some say, "there will always be a difference between  $0.9999\dots$  and 1."

Well, sort of. Yes, at any given stop, at any given stage of the expansion, for any given *finite* number of 9s, there will be a difference between  $0.999\dots 9$  and 1. That is, if you do the subtraction,  $1 - 0.999\dots 9$  will not equal zero. But the point of the "dot, dot, dot" is that there is no end;  $0.9999\dots$  is infinite. There is no "last" digit. So the "there's always a difference" argument betrays a lack of understanding of the infinite.

We have learned that  $\frac{1}{3} = 0.333\dots$  in decimal form.

So  $\frac{1}{3} + \frac{1}{3} + \frac{1}{3} = 3(\frac{1}{3}) = 1$ . Reasonably then,  $0.333\dots + 0.333\dots + 0.333\dots = 3(0.333\dots)$  should also equal 1. But  $3(0.333\dots) = 0.999\dots$ . Then  $0.999\dots$  must equal 1.

If two numbers are different, then you can fit another number between them, such as their average. But what number could you possibly fit between  $0.999\dots$  and  $1.000\dots$ ?

|                                 |  |
|---------------------------------|--|
| <b>Fraction to a percentage</b> | Convert the fraction to a decimal and then the decimal to a percent. |
|---------------------------------|--|

**Convert each fraction as a percent.**

|     |                 |  |     |                 |  |     |                  |  |
|-----|-----------------|--|-----|-----------------|--|-----|------------------|--|
| 1.  | $\frac{1}{2}$   |  | 2.  | $\frac{1}{4}$   |  | 3.  | $\frac{3}{4}$    |  |
| 4.  | $\frac{1}{5}$   |  | 5.  | $\frac{2}{5}$   |  | 6.  | $\frac{3}{5}$    |  |
| 7.  | $\frac{4}{5}$   |  | 8.  | $\frac{1}{10}$  |  | 9.  | $\frac{3}{10}$   |  |
| 10. | $\frac{7}{10}$  |  | 11. | $\frac{9}{10}$  |  | 12. | $\frac{1}{8}$    |  |
| 13. | $\frac{3}{8}$   |  | 14. | $\frac{5}{8}$   |  | 15. | $\frac{7}{8}$    |  |
| 16. | $\frac{1}{3}$   |  | 17. | $\frac{2}{3}$   |  | 18. | $\frac{1}{100}$  |  |
| 19. | 1               |  | 20. | $\frac{19}{20}$ |  | 21. | $3\frac{23}{50}$ |  |
| 22. | $\frac{19}{25}$ |  | 23. | $3\frac{8}{9}$  |  | 24. | $\frac{24}{40}$  |  |

**Write <, >, or = to make each sentence true.**

|     |                |                  |     |                   |                  |
|-----|----------------|------------------|-----|-------------------|------------------|
| 25. | $\frac{1}{4}$  | $\frac{9}{40}$   | 26. | $11\frac{13}{40}$ | $11\frac{3}{8}$  |
| 27. | $1\frac{3}{8}$ | 1.375            | 28. | $\frac{2}{25}$    | $\frac{22}{250}$ |
| 29. | 2.78           | $2\frac{39}{50}$ | 30. | $\frac{3}{10}$    | $\frac{29}{100}$ |

Genetic traits are characteristics that are passed from the parents to their children. Children receive half of their traits from their mother and half from their father. Some traits have a wide variety (eye color, hair color), while others have only two possible forms. In this activity you will identify some common genetic traits and find the percent of students in our class that possess each.

Complete the table below with your partner.

| Trait      | Description                           | You | Class Total |  |
|------------|---------------------------------------|-----|-------------|--|
| Handedness | (A) Left or (B) Right                 |     |             |  |
| Hairline   | (A) Straight or (B) Peaked            |     |             |  |
| Dimples    | (A) Yes or (B) No                     |     |             |  |
| Freckles   | (A) Yes or (B) No                     |     |             |  |
| Hair Whorl | (A) Clockwise or (B) Counterclockwise |     |             |  |
| Ear Lobe   | (A) Free or (B) Attached              |     |             |  |
| Tongue     | (A) Roller or (B) Non-roller          |     |             |  |

Find the percent of each trait in the class and complete the table below. Round to the nearest tenth.

| Trait      | Class Percent |  |                  |  |
|------------|---------------|--|------------------|--|
| Handedness | Left          |  | Right            |  |
| Hairline   | Straight      |  | Peaked           |  |
| Dimples    | Yes           |  | No               |  |
| Freckles   | Yes           |  | No               |  |
| Hair Whorl | Clockwise     |  | Counterclockwise |  |
| Ear Lobe   | Free          |  | Attached         |  |
| Tongue     | Roller        |  | Non-roller       |  |

|    |  |  |
|----|--|--|
| 1. | Do the traits add up to 100%? Explain why or why not?          |  |
| 2. | What is the most common trait in our class?                    |  |
| 3. | Do we have any traits evenly distributed throughout our class? |  |

**Convert between fractions, decimals, and percentages to complete the table below.**



|         | <b>Fraction (simplified)</b>                          | <b>Decimal</b>                                 | <b>Percent</b>                                |
|---------|---|--|---|
| 1./2.   |   |  | Taco Bell has 2.2% of the fast food market.   |
| 3./4.   |   |  | McDonalds has 7.8% of the fast food market.   |
| 5./6.   |   |  | Dairy Queen has 1.2% of the fast food market. |
| 7./8.   |   |  | 1.5%  |
| 9./10.  |   |  | 150%  |
| 11./12. |   | Dominoes has 0.011 of the fast food market.    |   |
| 13./14. |   | Subway has 0.013 of the fast food market.      |   |
| 15./16. |   | KFC has 0.018 of the fast food market.         |   |
| 17./18. |   | Burger King has 0.034 of the fast food market. |   |
| 19./20. |   | 1.25   |   |
| 21./22. | Pizza Hut has $\frac{1}{40}$ of the fast food market. |  |   |
| 23./24. | Hardees has $\frac{3}{200}$ of the fast food market.  |  |   |
| 25./26. | Wendys has $\frac{1}{50}$ of the fast food market.    |  |   |
| 27./28. | $\frac{24}{25}$                                       |  |   |
| 29./30. | $\frac{16}{25}$                                       |  |   |

**On a separate sheet of paper, place the following numbers in order from greatest to least.**

|     |   |     |  |
|-----|---|-----|--|
| 31. | $0.875, \frac{9}{10}, \frac{15}{16}, 0.98, 100\%, 9\%$  | 32. | $75\%, 0.55, \frac{13}{20}, 45\%, \frac{17}{20}$ |
| 33. | $1\%, 0.001, \frac{1}{99}, \frac{1}{101}, 0.1$  | 34. | $0.9, 85\%, \frac{9}{10}\%, \frac{1}{2}$         |
| 35. | On your separate paper rank the top 10 fast food restaurants listed above in order of market share (greatest to least). |     |  |

In each set, write the one that does not belong.

|     |                  |                |                  |                  |                  |  |
|-----|------------------|----------------|------------------|------------------|------------------|--|
| 1.  | $\frac{10}{100}$ | 10%            | 0.10             | $\frac{1}{10}$   | 1%               |  |
| 2.  | $\frac{25}{100}$ | 25%            | 0.25             | $\frac{1}{4}$    | 0.025            |  |
| 3.  | 0.05             | $\frac{5}{10}$ | 5%               | $\frac{1}{20}$   | $\frac{5}{100}$  |  |
| 4.  | 1%               | 0.1            | $\frac{1}{100}$  | 0.01             | 1.0%             |  |
| 5.  | $\frac{1}{2}$    | 50%            | 0.2              | $\frac{2}{4}$    | $\frac{50}{100}$ |  |
| 6.  | 0.5              | 50%            | $\frac{1}{2}$    | 0.50             | $\frac{5}{100}$  |  |
| 7.  | $\frac{1}{4}$    | 25%            | 25.0             | $\frac{25}{100}$ | 0.25             |  |
| 8.  | 10%              | $\frac{1}{10}$ | 0.1              | $\frac{1}{100}$  | 0.10             |  |
| 9.  | 0.75             | $\frac{2}{3}$  | 75%              | $\frac{75}{100}$ | 0.750            |  |
| 10. | $\frac{40}{100}$ | 40%            | 0.4              | $\frac{4}{10}$   | 0.04             |  |
| 11. | 0.25             | $\frac{1}{4}$  | 25%              | 1.4              | $\frac{25}{100}$ |  |
| 12. | $\frac{1}{5}$    | 0.5            | 20%              | $\frac{20}{100}$ | 0.2              |  |
| 13. | 50%              | 0.5            | $\frac{5}{10}$   | $\frac{1}{5}$    | $\frac{50}{100}$ |  |
| 14. | 0.15             | 15%            | $\frac{15}{100}$ | 1.5              | 0.150            |  |
| 15. | $\frac{80}{100}$ | 0.8            | $\frac{4}{5}$    | 80%              | $\frac{8}{100}$  |  |

| <b>Fraction, Decimal, Percentage Conversions</b> |   |
|--|---|
| <b>Percent to a fraction</b>                     | <p style="text-align: center;">Write the percent number over 100 and simplify</p> <p style="text-align: center;">Ex. <math>78\% = \frac{78}{100} = \frac{39}{50}</math></p>   |
| <b>Decimal to a percentage</b>                   | <p style="text-align: center;"><i>The Dr. Pepper (DP) Method</i></p> <p style="text-align: center;">  </p> <p style="text-align: center;">When converting a decimal to a percent, move the decimal point two places to the right.</p> <p style="text-align: center;">Ex. <math>3.427 = 342.7\%</math></p> |
| <b>Percentage to a decimal</b>                   | <p style="text-align: center;"><i>The Dr. Pepper (DP) Method</i></p> <p style="text-align: center;">  </p> <p style="text-align: center;">When converting a percent to a decimal, move the decimal point two places to the left.</p> <p style="text-align: center;">Ex. <math>0.024 = 2.4\%</math></p>    |
| <b>Decimal to a fraction</b>                     | <p style="text-align: center;"><b>Simply read the decimal the correct way and simplify</b></p> <p style="text-align: center;">Ex. <math>.318 = \text{three hundred eighteen thousandths} = \frac{318}{1000}</math></p> <p style="text-align: center;"><math>\frac{318}{1000} = \frac{159}{500}</math></p>   |
| <b>Fraction to a decimal</b>                     | <p style="text-align: center;"><b>Divide!</b></p> <p style="text-align: center;">Ex. <math>\frac{3}{5} = 3 \div 5 = .6</math></p> <p style="text-align: center;">If the decimal keeps repeating use bar notation.</p> <p style="text-align: center;">Ex. <math>\frac{2}{3} = 2 \div 3 = \overline{.6}</math></p>  |
| <b>Fraction to a percentage</b>                  | <p style="text-align: center;">Convert the fraction to a decimal and then the decimal to a percent OR set up a proportion.</p> <p style="text-align: center;">Ex. <math>\frac{3}{5}</math> so, <math>\frac{3}{5} = \frac{x}{100}</math>, <math>x = 60\%</math></p>  |



(Adapted from Dinah Chancellor, 1998)

Cut out the fraction, decimal, and percent cards below. Organize the cards from *greatest to least*.

|                  |                |                |                 |                  |                  |                  |                 |
|------------------|----------------|----------------|-----------------|------------------|------------------|------------------|-----------------|
| $\frac{1}{4}$    | $\frac{3}{6}$  | $\frac{12}{4}$ | $\frac{9}{12}$  | $\frac{2}{8}$    | $\frac{2}{6}$    | $\frac{6}{8}$    | $\frac{19}{20}$ |
| $\frac{50}{100}$ | $\frac{5}{20}$ | $\frac{16}{4}$ | $\frac{11}{17}$ | $\frac{25}{100}$ | $\frac{33}{100}$ | $\frac{66}{100}$ | $\frac{1}{15}$  |
| 0.67             | 4.75           | $\frac{1}{2}$  | $\frac{6}{6}$   | 0                | 4                | $\frac{3}{4}$    | $\frac{1}{3}$   |
| $\frac{7}{8}$    | 5              | $2\frac{3}{6}$ | $\frac{0}{8}$   | $4\frac{3}{4}$   | 0.56             | 0.75             | 1               |
| $\frac{75}{100}$ | $\frac{2}{3}$  | $\frac{15}{3}$ | $12\frac{1}{2}$ | 27               | 29%              | 3.01             | 75%             |
| 33%              | 100%           | $9\frac{4}{5}$ | 18              | 59.5             | 50%              | 9.8              | 75              |
| 89               | 49             | 61             | 11              | 39               | 15.2             | 100              | 2               |

Create 8 cards of your own to add to your list.

|  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|
|  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|

There once was a bunch of tiny frogs who arranged a running competition. The goal was to reach the top of a very high tower. A big crowd had gathered around the tower to see the race and cheer on the contestants.

The race began...

Honestly: No one in crowd really believed that the tiny frogs would reach the top of the tower. You heard statements such as:

"Oh, WAY too difficult!!!"

"They will NEVER make it to the top."

or: "Not a chance that they will succeed. The tower is too high!"

The tiny frogs began collapsing. One by one except for those, who in a fresh tempo, were climbing higher and higher.

The crowd continued to yell, "It is too difficult!!! No one will make it!"

More tiny frogs got tired and gave up...But ONE continued higher and higher and higher. This one wouldn't give up!

At the end everyone else had given up climbing the tower, except for the one tiny frog who, after a big effort, was the only one who reached the top! THEN all of the other tiny frogs naturally wanted to know how this one frog managed to do it?

A contestant asked the tiny frog how he had found the strength to succeed and reach the goal.

It turned out...That the winner was DEAF!!!!

The wisdom of this story is: Never listen to other people's tendencies to be negative or pessimistic.....because they take your most wonderful dreams and wishes away from you...the ones you have in your heart!

Always think of the power words have, because everything you hear and read will affect your actions!

Always be...POSITIVE!

And above all: Be DEAF when people tell YOU that you can not fulfill your dreams!