

6th Grade Assignment – Week #23

Individual Work:

- Do as much as you can with Sheet #19 in the workbook.

Group Assignments:

Choose any of the below problems to work on either on Tuesday or Thursday

- 1) *If you wish (not required!)* you can continue to try to find the fourth and fifth perfect numbers (see last week's assignment). I gave a bit of a hint in Monday's lecture.
- 2) Jen owns an apple orchard. Yesterday, her farm harvested 42,000 apples. If each apple weighs 4 ounces, what is the total weight of the apples? (Give your answer in ounces, pounds and tons.)
- 3) Missing-Digit Arithmetic
Fill in the missing digits (indicated by “?”) for these problems.

$$\begin{array}{r} \text{a) } \quad 7? \\ \times \quad ?5 \\ \hline \quad ?90 \\ + \quad ??20 \\ \hline \quad ?5?? \end{array} \qquad \begin{array}{r} \text{b) } \quad ??7 \\ \times \quad 3?? \\ \hline \quad ?0?3 \\ \quad ?1?0 \\ + \quad ?5?00 \\ \hline \quad ?7???$$

- 4) Find the abundance quotient of the second smallest odd abundant number: 1575.
(Recall that the abundance quotient of a number is the sum of all its factors (except for the number itself) divided by the number itself.)
- 5) Find two numbers that have a difference of 8 and a product of 768.

6th Grade Math – Sheet #19

Do it in your head.

- 1) $14 \cdot 3$
 - 2) 15^2
 - 3) $25 \cdot 5$
 - 4) 25^2
 - 5) Convert $\frac{1}{8}$
 - 6) Convert $\frac{1}{4}$
 - 7) Convert $\frac{71}{999}$
 - 8) $71 \div 999$
 - 9) Convert 0.2
 - 10) Convert 0.6
 - 11) Convert 0.07
 - 12) 2^5
 - 13) 4^3
 - 14) 5^4
 - 15) 700^2
 - 16) $5.72 \cdot 1000$
 - 17) $7.6 \cdot 0.11$
 - 18) $0.14 \div 4$
 - 19) $21 \div 33$
- Estimate.*
- 20) $609 \cdot 793$
 - 21) $6785 \div 89$
 - 22) $23,405 - 18,482$

Divisibility.

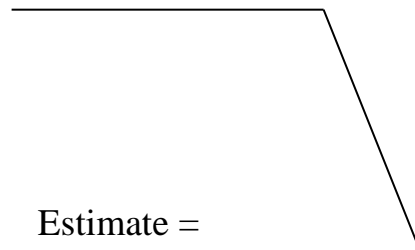
- 23) 1199562 is evenly divisible by which: 2, 3, 4, 5, 9, or 10?

Fractions.

- 24) Reduce each fraction.
- a) $\frac{112}{256}$
 - b) $\frac{5175}{17775}$
- 25) For each pair, determine which is bigger and by how much.
- a) $\frac{13}{35}$ and $\frac{3}{8}$
 - b) 23% and 26%

Angle Measure.

- 26) Estimate the size of the angle, and then use a protractor to measure it.



Measurement =

Prime Factorization.

- 27) Give the prime factorization.
- a) 720
 - b) 99900
- 28) Multiply the prime factorization out.
- a) $5 \cdot 11^2 \cdot 17$
 - b) $2^5 \cdot 5^4 \cdot 3 \cdot 11$

Statistics.

- 29) Find the *Mean*, *Median*, and *Mode* of these scores:
- 210, 230, 460, 250,
280, 170, 110, 180,
140, 250, 190, 220

Calculating a percentage of a number.

30) Review the example and the problems from the previous worksheet. Then do each of these problems using either the fraction method or the decimal method, depending upon which is easier.

What is...

- a) 10% of 3400?
- b) 50% of 48?
- c) 21% of 450?
- d) 20% of 750?
- e) 75% of 1200?
- f) $33\frac{1}{3}\%$ of 6000?
- g) 39% of 700?
- h) 25% of 44?

Percents.

- 31) Convert to a fraction.
- a) 73%
 - b) 46%
- 32) Convert to a decimal.
- a) 28%
 - b) 9%
- 33) Convert to a percent.
- a) 0.7
 - b) 0.07
 - c) $\frac{23}{100}$
 - d) $\frac{3}{4}$

Determining the percentage.

Example: 15 is what percent of 25?

This question can be answered in three ways:

Method #1 If the fraction is (or reduces to) something that we have memorized the percentage for...
 $\frac{15}{25}$ reduces to $\frac{3}{5}$,
which is 60%.

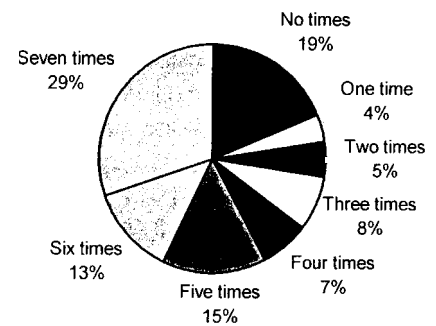
Method #2 If the denominator can easily be changed to 100...
With $\frac{15}{25}$ we multiply top and bottom by 4 to get $\frac{60}{100}$,
which is 60%.

Method #3 Otherwise, we convert to a decimal by dividing.
With $\frac{15}{25}$ we divide 25 into 15, which is 0.6 or 60%.

Note: Method #3 is always possible, but should be used only if the first two methods aren't possible.

- 34) Study the above example and then do each of these:
- a) 43 is what percent of 50?
 - b) 320 is what percent of 400?
 - c) 388 is what percent of 400?
 - d) 450 is what percent of 720?
 - e) 90 is what percent of 750?

Pie Charts



35) The above pie chart shows the result of a survey of 800 people that asked how many times per week they typically eat breakfast at home. Answer the following.

- a) What is the number of people (out of the 800 surveyed) that eat breakfast at home every day?
- b) What percentage of the people eat breakfast at home at least 5 days per week?
- c) What is the number of people that eat breakfast at home at least 5 days per week?
- d) Is the following statement true or false? *More people eat breakfast at home every day than eat breakfast at home either two, three, or four times per week.*