§1 Sunday, 06/21/20 Lesson Printable

The following problems are listed in (roughly) increasing order of difficulty / topic. Any problems we do not finish in class should be attempted at home.

§1.1 FOIL Problems

$95 \times 30 =$	$90 \times 78 =$	$51 \times 11 =$	$83 \times 51 =$
$64 \times 53 =$	$65 \times 81 =$	$92 \times 76 =$	$25 \times 46 =$
$94 \times 92 =$	$27 \times 64 =$	$34 \times 27 =$	$11 \times 77 =$
$44 \times 87 =$	$86 \times 63 =$	$54 \times 92 =$	$83 \times 68 =$
$72 \times 65 =$	$81 \times 96 =$	$57 \times 89 =$	$25 \times 98 =$
$34 \times 32 =$	$88 \times 76 =$	$22 \times 11 =$	$36 \times 69 =$
$35 \times 52 =$	$15 \times 88 =$	$62 \times 48 =$	$56 \times 40 =$
$62 \times 78 =$	$57 \times 67 =$	$28 \times 44 =$	$80 \times 71 =$
$51 \times 61 =$	$81 \times 15 =$	$64 \times 14 =$	$47 \times 37 =$
$79 \times 97 =$	$99 \times 87 =$	$49 \times 54 =$	$29 \times 67 =$

§1.2 Scientific Notation Problems

Convert the following to scientific notation with **two significant digits**:

$3.232 =$	$2.32 =$	$4.1 =$	$2.34 =$
$9.9 =$	$12345 =$	$123 =$	$456 =$

Convert the following to scientific notation with **three significant digits** (remember: this is used on **calculator**!):

$$3.31 = \qquad 2.23 = \qquad 66.1 = \qquad 234.5 =$$

$$9.911 = \qquad 12414 = \qquad 434 = \qquad 321 =$$

§1.3   Variable Problems

1. Find the smallest and largest number of a sequence of 7 consecutive integers that sum to 49.

2. (Mathcounts Ratio Warmup) What is $\frac{9}{30}$ as a common fraction?

3. In a pasture there are 12 white horses and the rest are black. If there are 52 horses in the pasture, what fraction are black? Express your answer as a common fraction.

4. (Mathcounts Ratio Warmup) There are three times the number of orange fish as blue fish in a tank at the pet store, and there are no other fish. What percentage of the fish are orange?

5. (Mathcounts Ratio Stretch) Fairy Godmother has granted wishes to Aurora, Belle and Cindi in the ratio $6 : 8 : 11$. What fraction of the ratios were granted to Belle? What percent of the wishes granted by Fairy Godmother were not granted to Aurora? What is the absolute difference between the percents of wishes Fairy Godmother has granted to Aurora and to Cindi?

6. (Mathcounts Chapter 2019/8) After a brisk workout, Felicia counts 32 heartbeats in 15 seconds. Based on this count, what is Felicia's expected number of heartbeats in one minute?

7. Dylan and Cody are working together again. Dylan can eat one apple in 1 minute. Cody can eat one apple in 2 minutes. How long will it take them working together to eat 15 apples?

8. Alice can mow the lawn in 3 hours, Bob can mow the lawn in 4 hours, and Chris can mow the lawn in 5 hours. Working together, how long will it take them to mow one lawn?