In-Class Exercises - Samples

1. John is five times as old as James. James is 6 years old now. How old is John?

2. How many positive three-digit numbers are there for which the tens digit exceeds the sum of the other two digits?

3. Lizzie turns to another page and multiplies the page number on the left by the page number on the right. The page number on the left is 6. What is the product of the two page numbers?

4. Old MacDonald has 4 chickens and 3 dogs in his farm. Each chicken has 2 legs and each dog has 4 legs. How many legs do they all have altogether?

5. What is the maximum product that can be obtained by multiplying two distinct numbers from the given set? Express your answer as a common fraction.

$$\left\{\frac{7}{48}, \frac{3}{16}, \frac{1}{6}, \frac{5}{24}\right\}$$

6. Express the following as a simple, reduced, rational number.

$$\cfrac{1}{2-\cfrac{1}{1+\cfrac{2}{1+\cfrac{1}{2}}}}$$

7. Give the letter(s) corresponding to the fraction(s) given which, when written as decimals, will not terminate.

   a) $\frac{3}{150}$

   b) $\frac{7}{75}$

   c) $\frac{11}{250}$

   d) $\frac{15}{48}$

8. On Halloween John received 144 pieces of candy. When he returned home. his sister took $\frac{1}{4}$ of the candy. Then his mother removed $\frac{1}{3}$ of what was left. When John wasn't looking. his dog ate $\frac{3}{8}$ of what he had kept in his bag. What fraction of the original amount did John end up with in his bag? Express your answer as a common fraction.

9. Seven math teachers decided to celebrate National Secretary's Day by buying a gift for their secretary for each day of the work week. Mark spent \$3.50 on Monday, Tess spent \$3.25 on Tuesday, Will spent \$4.25 on Wednesday, Tim spent \$5.25 on Thursday, and Felicia spent \$4.75 on Friday. Sam and Sally each agreed to pay one-seventh of the total cost. In dollars, how much does Sam owe?

10. What is the sum of the digits a and b in the following multiplication problem?

$$\begin{array}{r} 63a1 \\ \times \quad 64 \\ \hline 9404 \\ \hline 47060 \\ \hline a64b4 \end{array}$$

11. Two consecutive integers have the property that twice the smaller integer is nine more than the larger integer. Find the value of the smaller integer.

12. Over the past 4 year period the price of sugar reflected the following consecutive changes: 25% increase the lst year, 25% increase the $2nd$ year, 20% decrease the 3 rd year and a 10% decrease the 4 th year. What is the ratio of the price of sugar today to that of 4 years ago? Express your answer in the form $a : b$ where a and b are relatively prime positive integers.

13. How many multiples of 11 are there between 100 and 1000?

14. The number 5005 is the product of four consecutive prime numbers. What is their sum?

15. The four consecutive digits a, b, c, and d are used to form the four-digit numbers $abcd$ and What is the greatest common divisor of all numbers in the form $abcd + dcba$?