Problem Set 33

1. Use words to write 4 049 001 021.
2. Round 4 049 001 021 to the nearest ten million.
3. Find the perimeter and area of a rectangle with sides $\frac{3}{4}$ in and $\frac{1}{2}$ in.
4. Find the average of the prime numbers between 40 and 55.
5. Find the least common multiple of 200, 78, and 45.
6. Consider the following numbers: 4805, 26 000, 1628, 6155, and 80 765.
   a) Find all numbers from the list that are divisible by 4.
   b) Find all numbers from the list that are divisible by 5.
   c) Find all numbers from the list that are divisible by 20.
7. Find $\frac{3}{15}$ of 300.
8. Write $\frac{9}{5}$ with denominator 100.
9. Reduce $\frac{720}{1296}$ to lowest terms.
10. Which fraction is larger, $\frac{5}{6}$ or $\frac{9}{11}$?
11. Write $12\frac{1}{10}$ as an improper fraction.
12. Write $\frac{123}{7}$ as a mixed number.
13. Perform the following operations. Do not use a calculator.
    a) $\frac{36}{28} \cdot \frac{7}{6} - \frac{5}{7} \div \frac{15}{21} =$
    b) $\frac{63}{54} \cdot \frac{21}{35} \cdot \frac{15}{22} =$
    c) $\frac{14}{21} \cdot \frac{7}{2} \div \frac{14}{6} - \frac{16}{24} \cdot \frac{12}{4} \cdot \frac{1}{3} =$
    d) $\dfrac{-3^2 + (-2)^3 - 3\,(2 - 2^2)}{2\,(3^2 - 2^3)} =$
    e) $\dfrac{-3 - [-(-2)] + \left[(-1)^2 - (-2)^2\right]\left[(-1)^8 + (-2)^2\right]}{-3 - (-2) + \left[(-2)^5 - (-5)\,(6)\right](-2) - 5} =$
14. Evaluate the expression $a^3 - 3a^2b + 3ab^2 - b^3$ if
    a) $a = 3$ and $b = 2$
    b) $a = -3$ and $b = 2$
    c) $a = -3$ and $b = -2$
    d) $a = \frac{3}{2}$ and $b = \frac{1}{2}$
15. Solve each of the following equations. Make sure to check your solution.
    a) $8b - 5 = 35$
    b) $x - \frac{1}{6} = \frac{1}{2}$
    c) $\frac{4x - 6}{-2} = 5$
    d) $\frac{5}{7}x + \frac{2}{3} = \frac{20}{21}$

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