

1) Mr. Louchart always leaves a 17% tip, computed on the price of a meal before taxes which he rounds up to the next whole penny. The county in which he lives also adds a sales tax to all meals of 6% which must be rounded up to the next whole penny. While out to dinner with two friends the bill came to \$ 28.00 for their three meals without tax and tip. If Mr. Louchart's dinner was twice as expensive as his other friend's, how much did Mr. Louchart have to pay with tax and tip included ?

2) Suppose a pizza with a 10 inch diameter cost \$ 5. How much more would a 15 inch pizza cost if you used a cost proportion based on the area of the pizza, than a 15 inch pizza using a cost proportion based on the diameter of the pizza ?

3) What is the product of the sum of all prime numbers x where $25 \leq x \leq 50$ and the sum of all the composite numbers y where $25 \leq y \leq 50$?

4) Find the smallest positive integer n with all the following properties.

The remainder is 1 when n is divided by 2.

The remainder is 2 when n is divided by 3.

The remainder is 3 when n is divided by 4.

The remainder is 4 when n is divided by 5.

The remainder is 5 when n is divided by 6.

The remainder is 6 when n is divided by 7.

5) How many three digit numbers can be formed given that the sum of the three digits is equal to 7 ?

6) Evaluate:

$$\begin{array}{r} 1 \\ \hline 2 + \frac{3}{5} \\ \hline 4 + \frac{7}{9} \\ \hline 6 + \frac{9}{10} \end{array}$$

7) 24% of 60 is 57% of what number ?

8) All of the dimensions of the American Flag are based on the hoist, or width, of the flag. The width of the union (the star field) is $\frac{7}{13}$ times the hoist and the length of the union is .76 times the hoist. The hoist of a given flag is 5 feet. How many square feet are in the area of the union of the American Flag? (Express your answer as a decimal rounded to the nearest hundredth place).

- 9) Simplify the following expression and give the answer as a fraction in lowest terms.

$$\overline{.1} + \overline{.12} + \overline{.123} + \overline{.1234}$$

- 10) 256 seats can be arranged in a rectangular array with 16 rows and 16 columns. How many other integral rectangular arrays are possible? [NOTE: 1×2 AND 2×1 ARE TWO DIFFERENT ARRAYS]

- 11) What is the surface area, to the nearest inch, of a rectangular prism with length = 0.8 feet, width = 5 inches, and height = 30.48 centimeters. (Let each inch equal 2.54 centimeters).

- 12) Simplify this expression: $(x - 3(2 - x(x - 4(-5)))) - (x + 3(2 + x(x + 4(5))))$.

- 13) Find the sum of the greatest common factor and the least common multiple of the following set of numbers: { 16, 39, 78, 324 }.

- 14) Write the equation of a line perpendicular to the line parallel to the line that goes through the following two points (3, -2) and (-4, 7). (Write answer in slope intercept form).

- 15) Find the sum of x and y for the following system of equations.

$$2x - 3y = 6$$

$$-3x + 4y = 8$$