MPM1D - UNIT 1: RATIONAL NUMBERS – PRACTICE TEST

KNOWLEDGE

1. Evaluate each of the following.
   a.) \( \frac{5}{6} - 3\frac{3}{4} \)
   b.) \( \frac{2}{3} \div 4\frac{5}{6} \)

2. Evaluate the following.
   \( \frac{-5}{6} + \frac{-2}{3} \times \frac{3}{4} \)

3. Evaluate the expression for the given values. \( 4a^2b^2; a = \frac{-2}{3}, b = -\frac{1}{2} \)
4. For the rectangle shown calculate the area and the perimeter. (Hint: \( A = lw \) & \( P = 2l + 2w \))

\[
\begin{array}{c}
2\frac{2}{3} \text{ in.} \\
4\frac{3}{4} \text{ in.}
\end{array}
\]

5. Evaluate the expression for the given values. 
\[
\frac{-x^4 - 5x}{x + (-1)^3} \text{ for } x = -2
\]

6. Calculate. For this question only, you may leave your answer as a decimal.
\[
\frac{16 - 4.8 \times 2.1}{6 + 6 \div (-6)}
\]
1. A piece of wood \(\frac{7}{8}\) in. long is cut from a piece \(45\frac{1}{2}\) in. long. If \(\frac{1}{16}\) in. is wasted for the cut, how much wood is left?

2. The formula to convert temperatures between degrees Fahrenheit and degrees Celsius is
   \[C = \frac{5}{9}(F - 32)\]. Apply the formula to convert Miami, Florida’s record high of 98 °F to degrees Celsius.

3. The temperature in Powassan was \(-4.8\) °C. The temperature in Callander was \(-4\frac{5}{6}\) °C. In which town was the temperature colder? Explain.
1. Determine two mixed numbers, with different denominators, that will have a sum of \( \frac{4}{5} \).

2. A large bottle holds \( \frac{3}{4} \) times the amount of liquid of a small bottle. Determine the number of large bottles that would hold the same amount as \( 10 \frac{1}{2} \) small bottles.

3. A small office buys a computer for $4575. Each year, its value is expected to be 65% of its value the previous year. Find the value of the computer after five years.