1. For the following problems, draw a picture using the rectangular fraction model and write the answer. Simplify your answer, if possible.

a. \( \frac{1}{3} - \frac{1}{4} = \)

\[ \frac{4}{12} - \frac{3}{12} = \frac{1}{12} \]

b. \( \frac{2}{3} - \frac{1}{2} = \)

\( \frac{4}{6} - \frac{3}{6} = \frac{1}{6} \)

c. \( \frac{5}{6} - \frac{1}{4} = \)

\[ \frac{20}{24} - \frac{6}{24} = \frac{14}{24} \div 2 = \frac{7}{12} \]

d. \( \frac{2}{3} - \frac{1}{7} = \)

\[ \frac{14}{21} - \frac{3}{21} = \frac{11}{21} \]

e. \( \frac{3}{4} \div \frac{3}{8} = \)

\[ \frac{3 \times 8}{4 \times 8} = \frac{24}{32} = \frac{3}{4} \]

\[ \frac{6}{8} - \frac{3}{8} = \frac{3}{8} \]

\[ \text{Multiples:} \ 4: 4, 8, 12, 16 \]

\[ 8: 8, 16 \]

\[ \frac{21}{28} - \frac{8}{28} = \frac{13}{28} \]

\[ \text{Multiples:} \ 4: 4, 8, 12, 16, 20, 24, 28 \]

\[ 7: 7, 14, 21, 28 \]
2. Mr. Penman had \(\frac{2}{3}\) liter of salt water. He used \(\frac{1}{5}\) of a liter for an experiment. How much salt water does Mr. Penman have left?

\[
\frac{2}{3} - \frac{1}{5} = \frac{7}{15}
\]

Mr. Penman has \(\frac{7}{15}\) liter of water left.

3. Sandra says that \(\frac{4}{7} - \frac{1}{3} = \frac{3}{4}\) because all you have to do is subtract the numerators and subtract the denominators. Convince Sandra that she is wrong. You may draw a rectangular fraction model to support your thinking.

\[
\frac{4}{7} - \frac{1}{3} = \frac{5}{21}
\]

Sandra is wrong because you have to find common denominators, then equivalent fractions, then subtract only the numerators. \(\frac{4}{7}\) is equal to \(\frac{12}{21}\) and \(\frac{1}{3}\) is equal to \(\frac{7}{21}\). The correct answer is \(\frac{5}{21}\).