More Adding and Subtracting Fractions

In 1 through 12, simplify each expression.

1. \( \frac{4}{6} + \frac{2}{9} \)  
2. \( \frac{2}{7} + \frac{1}{2} \)  
3. \( \frac{8}{12} + \frac{1}{6} \)  
4. \( \frac{3}{8} + \frac{1}{6} \)  
5. \( \frac{1}{12} + \frac{7}{9} \)  
6. \( \frac{4}{18} + \frac{2}{9} \)  
7. \( \frac{1}{3} + \frac{1}{4} \)  
8. \( \frac{5}{15} + \frac{3}{5} \)  
9. \( \frac{1}{2} - \left( \frac{1}{8} + \frac{1}{8} \right) \)  
10. \( \frac{3}{4} + \left( \frac{1}{4} - \frac{1}{6} \right) \)  
11. \( \left( \frac{1}{2} + \frac{3}{20} \right) - \frac{2}{20} \)  
12. \( \left( \frac{2}{5} + \frac{1}{5} \right) - \frac{3}{10} \)  

13. A plumber is fitting a water pipe that is \( \frac{3}{4} \) foot long on to a water pipe that is \( \frac{2}{12} \) foot long. How long will the finished pipe be?

A  \( \frac{11}{12} \) foot  
B  \( \frac{8}{16} \) foot  
C  \( \frac{2}{12} \) foot  
D  1 foot

14. Joel made some muffins. He gave \( \frac{1}{4} \) of the muffins to a neighbor. He took \( \frac{3}{8} \) of the muffins to school. What fraction of the muffins is left?

A  \( \frac{4}{12} \)  
B  \( \frac{3}{8} \)  
C  \( \frac{5}{12} \)  
D  \( \frac{8}{8} \)

15. Carl has three lengths of cable, \( \frac{5}{6} \) yard long, \( \frac{1}{4} \) yard long, and \( \frac{2}{3} \) yard long. He needs at least 1 yard of cable.

a Which two pieces together make a length at least 1 yard and closest to 1 yard?

b If Carl uses the two shortest pieces, how much more cable would he need?

c After Carl has used 1 yard of cable, how much cable will he have left? Explain how you found your answer.