Finding Common Denominators

In 1 through 8, find a common denominator for each pair of fractions.

1. \( \frac{2}{5} \) and \( \frac{3}{4} \)  
2. \( \frac{5}{8} \) and \( \frac{4}{9} \)  
3. \( \frac{1}{4} \) and \( \frac{4}{7} \)  
4. \( \frac{5}{12} \) and \( \frac{7}{9} \)  
5. \( \frac{7}{15} \) and \( \frac{1}{3} \)  
6. \( \frac{1}{2} \) and \( \frac{2}{3} \)  
7. \( \frac{2}{9} \) and \( \frac{4}{5} \)  
8. \( \frac{7}{8} \) and \( \frac{5}{6} \)

In 9 through 16, find a common denominator for each pair of fractions. Then rename each fraction in the pair.

9. \( \frac{3}{12} \) and \( \frac{3}{8} \)  
10. \( \frac{1}{8} \) and \( \frac{2}{7} \)  
11. \( \frac{1}{2} \) and \( \frac{2}{9} \)  
12. \( \frac{1}{3} \) and \( \frac{1}{5} \)  
13. \( \frac{7}{9} \) and \( \frac{1}{6} \)  
14. \( \frac{1}{6} \) and \( \frac{3}{4} \)  
15. \( \frac{7}{8} \) and \( \frac{2}{3} \)  
16. \( \frac{3}{8} \) and \( \frac{5}{6} \)

17. Train A arrives at Central Station on the hour and every 12 minutes. Train B arrives on the hour and every 15 minutes. When do both trains arrive at the same time?
   A  On the hour and 30 minutes past the hour  
   B  On the hour and 15 minutes to the hour  
   C  On the hour and 27 minutes past the hour  
   D  On the hour only

18. Andrew wants to rename \( \frac{2}{7} \) and \( \frac{3}{4} \) using a common denominator. Which of the following shows these fractions renamed correctly?
   A  \( \frac{8}{28} \) and \( \frac{21}{28} \)  
   B  \( \frac{2}{28} \) and \( \frac{3}{28} \)  
   C  \( \frac{4}{28} \) and \( \frac{6}{28} \)  
   D  \( \frac{2}{7} \) and \( \frac{3}{7} \)

19. Manuel says that you can use one of the denominators of \( \frac{5}{6} \) and \( \frac{11}{30} \) when renaming these fractions using a common denominator. Why is this true?