Lesson 2.3: Adding, and subtracting Rationals

Need to know:
- To add or subtract rational functions or expressions, we need to determine the lowest common denominator (LCD). To do this, factor all the denominators first, then LCD consists of the product of any common factors and all the unique factors.
- Restrictions are found by finding the zeros of all denominators, that is, the zeros of the LCD.

Example 1: Simplify and state any restrictions on the variables:

a) $\dfrac{3n}{2n+1} + \dfrac{4}{n-3}$
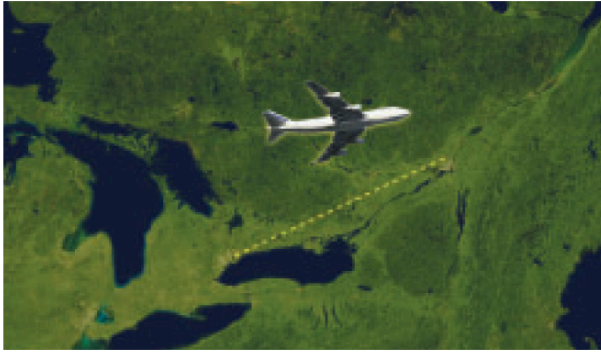
b) $\dfrac{2t}{t^2-1} - \dfrac{t+2}{t^2+3t-4}$

c) $\dfrac{p+1}{p^2+2p-35} + \dfrac{p^2+p-12}{p^2-2p-24} \times \dfrac{p^2-4p-12}{p^2+2p-15}$

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Example 2:

A jet flies along a straight path from Toronto to Montreal and back again. The straight-line distance between these cities is 540 km. On Monday, the jet made the round trip when there was no wind. On Friday, it made the round trip when there was a constant wind blowing from Toronto to Montreal at 80 km/h. While travelling in still air, the jet travels at constant speed.

❓ Which round trip takes less time?

Write expressions for the length of time required to fly from Toronto to Montreal in each situation. Determine which trip takes less time.

Homework: Textbook pg. 129. #9abd, 11; pg133. #17; pg134. #5