Answers - Partial fractions (page ??)

1. $\frac{x+5}{(x-3)(x+1)} = \frac{A}{x-3} + \frac{B}{x+1}$

   $A(x+1) + B(x-3) = x+5$

   Substituting critical values of $x = 3$ and $x = -1$:

   $4A = 8 \Rightarrow A = 2$

   $-4B = 4 \Rightarrow B = -1$

   Partial fraction decomposition is $\frac{2}{x-3} - \frac{1}{x+1}$

2. $\frac{x+26}{x^3+3x-10}$

3. $\frac{4x-8}{x^2-8x+15}$

4. $\frac{12x-1}{x^2+x-12}$

5. $\frac{x-5}{(x-2)^2}$

6. $\frac{5x+4}{(x-1)(x+2)^2}$

7. $\frac{2x^2-5x+7}{(x-2)(x-1)^2}$

8. $\frac{6-x}{(1-x)(4+x^2)}$

9. $\frac{5x+2}{(x+1)(x^2-4)}$