Write all your answers on a separate sheet. It is very important that you show clearly any work you had to do to get the answer. These first eight questions are 1 point each. You won't get the point if your answer doesn't match the solution on page 2!

(1) Compute and simplify: $\dfrac{3}{b} - \dfrac{1}{b-3}$

(2) Compute and simplify: $\dfrac{5}{x-9} + \dfrac{4}{9-x}$

(3) Compute and simplify: $\dfrac{4m}{m^2 - 3m + 2} - \dfrac{1}{m-2}$

(4) Simplify: $\dfrac{\frac{x}{8}}{\frac{x^2}{4}}$

(5) Simplify: $\dfrac{2 - \frac{1}{x}}{2 + \frac{1}{x}}$

(6) Solve: $\dfrac{4}{x} + \dfrac{3}{4} = \dfrac{10}{x}$

(7) Solve: $\dfrac{1}{x-2} - \dfrac{2}{x+2} = \dfrac{2}{x^2 - 4}$

(8) Solve: $\dfrac{2x}{x-3} + \dfrac{2}{x-5} = \dfrac{3x}{x^2 - 8x + 15}$

These next seven questions are 4 points each. Show clearly all your working out and reasoning.

(9) Compute and simplify: $\dfrac{4}{w} + \dfrac{3}{w+1}$

(10) Compute and simplify: $\dfrac{3}{x^2 + 2x + 1} - \dfrac{x^2}{3x + 3}$

(11) Simplify: $\dfrac{\frac{1}{2}}{\frac{3}{4}}$

(12) Simplify: $\dfrac{\dfrac{m}{n} + 2}{\dfrac{m^2}{n^2} - 4}$

(13) Simplify: $2 + \dfrac{1}{2 + \dfrac{1}{2x}}$

(14) Solve: $\dfrac{1}{2} - \dfrac{3}{x} = \dfrac{5}{6x}$

(15) Solve: $\dfrac{3}{x - 4} - \dfrac{4}{x^2 - 3x - 4} = \dfrac{1}{x + 1}$

Answers to questions (1)-(8):

(1) $\dfrac{2b - 9}{b(b - 3)}$

(2) $\dfrac{1}{x - 9}$

(3) $\dfrac{3m + 1}{(m - 1)(m - 2)}$

(4) $\dfrac{1}{2x}$

(5) $\dfrac{2x - 1}{2x + 1}$

(6) $x = 8$

(7) $x = 4$

(8) $x = -1/2$ or 6