

Mathematics for Science

Assignment 6

Decomposing Rational Functions: CASE I and II

Lecturer: Kahenya, N.P

Instructions: Attempt all the Questions

1) Decompose into partial fractions

a)  $\frac{x+2}{x(x+2)^3}$

d)  $\frac{5x^2+7x-14}{x^2(x+2)^2(x-5)^3}$

b)  $\frac{x^2+3x+2}{(x+3)(x-5)^3}$

e)  $\frac{x+9}{(3x-7)^2}$

c)  $\frac{x^5+2x^3+2}{(3x-2)^3}$

f)  $\frac{x^2+3x+12}{(x+3)^2(x-9)^3}$

2) Decompose into partial fractions;

a)  $\frac{3x+2}{x(x+7)}$

c)  $\frac{3x^2+2x^2-5}{(x+2)(x-3)(2x+7)}$

e)  $\frac{7x^3+2x^2+8x-10}{x(x+9)}$

b)  $\frac{x-7}{(x+2)(x-6)}$

d)  $\frac{2x^2+3}{(3x+2)(x-5)}$

f)  $\frac{1}{(x-2)(x-5)}$

