

## Math 220 - Calculus f. Business and Management - Worksheet 4

### Worksheet 4 - Polynomials and Fractions

#### Roots of Polynomials

*Exercise 1: Find the roots (zeroes) of each function. Note: sometimes the factors will be in radical form.*

$$\begin{aligned} 1a: f(x) &= x + 7, & 1b: f(x) &= 3 - 2x, & 1c: f(x) &= x^2 - x - 20, \\ 1d: f(x) &= 6x^2 + x - 1, & 1e: f(x) &= x^2 - 4x + 2, & 1f: f(x) &= x^3 - 5x^2 + 14x \end{aligned}$$

#### Domains of Functions

*Exercise 2: Find the domain of each function.*

$$\begin{aligned} a: f(x) &= \frac{-6}{x^2 + 2x - 24}, & b: f(x) &= \frac{5x}{2x^2 + 3x - 7}, & c: f(x) &= \frac{x + 2}{x^2 + 6x + 8}, \\ d: f(x) &= \frac{8}{x^2 + 2x + 5}, & e: f(x) &= \frac{1}{\sqrt{2x - 8}}, & f: f(x) &= \frac{2x}{\sqrt{5 - 3x}}, \\ g: f(x) &= \frac{x^2}{\sqrt{-4x}}, & h: f(x) &= \frac{1}{\sqrt{x^2 - 3x - 18}}, & i: f(x) &= \frac{\sqrt{x}}{x^2 + x - 6} \end{aligned}$$