Name: _Solutions_

Problem 1. *Find the roots of the following polynomials*

(a) $r^2 + 7 = 0 \Rightarrow r^2 = -7$

$$r = \pm\sqrt{7}\,i$$

(b) $x^2 - 4x - 9$

$$x = \frac{4 \pm \sqrt{16+36}}{2} = \frac{4 \pm \sqrt{52}}{2} = \frac{4 \pm 2\sqrt{13}}{2} = 2 \pm \sqrt{13}$$

(c) $z^2 + 2z + 9$

$$z = \frac{-2 \pm \sqrt{4-36}}{2} = \frac{-2 \pm i\sqrt{32}}{2} = -1 \pm 2\sqrt{2}\,i$$