

Supplemental Notes for Sections 2.4

1. Perform the following operations on Complex Numbers.

(a) $(2 - 3i) + (4 + i)$

(b) $(2 - \sqrt{-25}) + (1 + \sqrt{-4})$

(c) $4i - (6 - 3i)$

(d) $(1 + 2i)(3 - i)$

(e) $(\sqrt{-81})(3 - \sqrt{-17})$

(f) $(5 - 4i)(5 + 4i)$

(g) $\frac{2-3i}{i}$

(h) $\frac{1-\sqrt{-12}}{2+\sqrt{-20}}$

(i) $\frac{1+i}{1-i}$

(j) $\frac{5+2i}{2-3i}$

2. Solve by using the special quadratic equation.

(a) $x^2 = -32$

(b) $(2x - 9) + 18 = 0$

3. Solve by completing the square.

(a) $x^2 + 5x + 1 = 0$

(b) $x^2 - 10x + 29 = 0$

4. Solve by using the quadratic formula.

(a) $2x^2 - 7x + 11 = 0$

(b) $7x^2 + 2 = x$

(c) $x^2 - 12x + 61 = 0$