

Review Homework Assignment. Due at the second class meeting.

1. Solve for  $x$ :  $3x^2 + 4x - 9 = 0$ . Simplify all radicals and check your answers by substituting into the given equation.
2. Give the quotient and remainder if  $5x^4 + 3x^3 + 3x^2 + 9x + 5$  is divided by  $x^2 + 5x + 3$ . Check your answer by remultiplying and adding the remainder.
3. Carefully graph the lines  $3x + 4y = 7$  and  $5x + 2y = 12$  on graph paper. Find the exact coordinates of their point of intersection, and check your answer by substitution in the given equations.
4. What is the largest set of real numbers on which the function whose rule is  $f(x) = (3x + 4)/(2x + 9)$  can be defined? Solve the equation  $y = f(x)$  for  $x$ .
5. Recall that  $i^2 = -1$ . If  $f(x) = x^2 + 3x - 4$ , compute  $f(2 + 3i)$ .
6. Find numbers  $a$  and  $b$  so that  $x^2 + 4x + 9 = (x + a)^2 + b$ .
7. Multiply out and collect like terms:  $(x - 2)(x^4 + 2x^3 + 4x^2 + 8x + 16)$ .
8. Multiply out and collect like terms:  $(2a + 3b)^3$ .
9. Multiply out and collect like terms:  $(a + 2b + 3c)^2$ .
10. Solve for  $x$  and plot your answer on a number line:  $|2x - 3| \geq 4$ .