

Math 110 – Chapter 1 – Worksheet 2 – Version A

Equations in the Quadratic Form; Inequalities; Equations and Inequalities Involving Absolute Values.

Section 1.5 Solving Other Types of Equations

1. Solve: $x^3 + 2x^2 - x - 2 = 0$
2. Solve: $x^4 = 4x^2$
3. Solve: $x^3 - 5x^2 = 4x - 20$
4. Solve: $\frac{1}{x} - \frac{12}{5x+10} = \frac{1}{5}$
5. Solve: $\frac{x}{x-2} - \frac{1}{x+2} = \frac{4x}{x^2-4}$
6. Solve: $x = \sqrt{x^3 - 6x}$
7. Solve: $\sqrt{6x+4} + 2 = x$
8. Solve: $\sqrt{x-5} + \sqrt{x} = 5$
9. Solve: $3(x-2)^{3/5} + 4 = 7$
10. Solve: $(2x+1)^{4/3} - 7 = 9$
11. Solve: $x^{2/3} - 7x^{1/3} + 6 = 0$
12. Solve: $(1 + \frac{1}{x})^2 - 6(1 + \frac{1}{x}) + 8 = 0$

Section 1.6 Inequalities

13. Solve the inequality and graph the solution set: $4x + 9 > 2(x + 6) + 1$
14. Solve the inequality and graph the solution set: $7 - 2x \geq -3$
15. Solve the inequality and graph the solution set: $2(4 - x) + 6x < 4(x + 1) + 7$
16. Solve the inequality and graph the solution set: $3(x - 2) + 5 \geq 7(x - 1) - 4(x - 2)$
17. Solve and write the solution set in interval notation: $2x + 7 \leq 1$ OR $3x - 2 < 4(x - 1)$
18. Solve and write the solution set in interval notation: $2(3 - x) - 3 < 5$ AND $2(x - 5) + 7 \leq 3$
19. Solve and write the solution in interval notation: $-6 \leq 4x - 2 < 4$
20. Solve: $x^2 + 2 < 3x + 6$
21. Solve: $\frac{2x+5}{x-1} \leq 1$

Section 1.6 Equations and Inequalities Involving Absolute Value

22. Solve: $|x - 2| = 0$
23. Solve: $|6x - 3| - 8 = 1$
24. Solve: $|x + 2| = |x - 3|$
25. Solve: $|3x - 4| = 2(x - 1)$
26. Solve: $|3x + 3| \leq 6$
27. Solve: $|2x + 3| \geq 6$
28. Solve: $|3x - 2| > -3$
29. Solve: $|7x - 4| \leq -5$
30. Solve: $|x - 2| < 2|x + 4|$