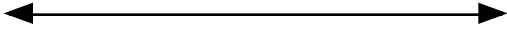


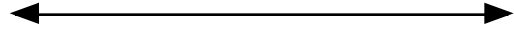
Section 4 – 4: Solving Polynomial Inequalities

Graph the solution to each Inequality and then state the solution in interval notation.

1. $(x-1)(x+5) \geq 0$



2. $x^4 - 13x^3 - 48x^2 > 0$



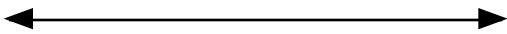
3. $x^2(x+1)(x+2) \leq 0$



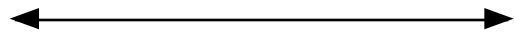
4. $-3x(x+2)(x-3) > 0$



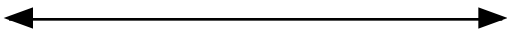
5. $-x(x-1)(x+5)^2 \geq 0$



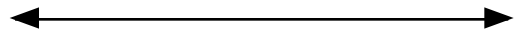
6. $-2x(x+2)^2 \geq 0$



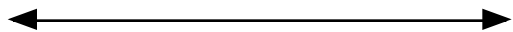
7. $(x-1)^2(x+5)^2 \leq 0$



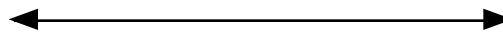
8. $-3x^2(x-1)(x-4) < 0$



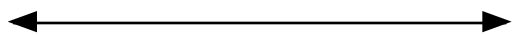
9. $(x+4)(x+1)(x-2) \leq 0$



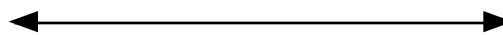
10. $x(x-1)^2(x-3) < 0$



11. $(x+2)^2(x-1)^2(x-3) > 0$



12. $-4x(x-3)^2 \leq 0$



13. $(x-3)^2(x-1) \geq 0$



14. $x^2(x-3)^2(x+4)^2 < 0$



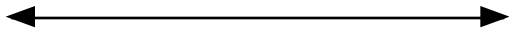
15. $(x-3)(x-4)^2(x+2)^2 \leq 0$



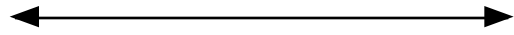
16. $(x-3)^2(x-4)(x+2)^2 \geq 0$



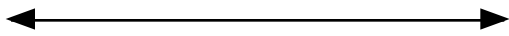
17. $x^2 - x - 20 \leq 0$



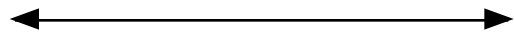
18. $x^2 - 9x + 18 > 0$



19. $x^4 - 13x^3 - 48x^2 \geq 0$



20. $x^3 - 3x^2 - 18x \leq 0$



21. $-x^3 - 10x^2 - 25x < 0$



22. $x^4 - 11x^3 + 28x^2 \geq 0$



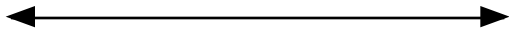
23. $\frac{x-2}{x+3} \geq 0$



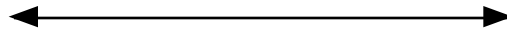
24. $\frac{-2(x+5)}{x^2-1} \leq 0$



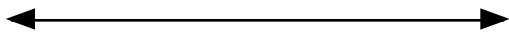
25. $\frac{(x-5)(x-3)}{x} < 0$



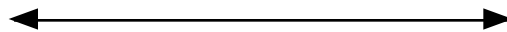
26. $\frac{(x-2)(x+4)}{x^2} > 0$



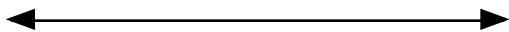
27. $\frac{(x+2)^2(x-5)}{-3x^2} < 0$



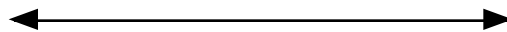
28. $\frac{(x-1)(x+4)}{x^2-4} \geq 0$



29. $\frac{-4x(x-1)}{x^2-6x+9} \leq 0$

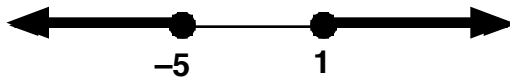


30. $\frac{(x-5)^2(x+2)}{x^2+1} \geq 0$



Section 4– 4

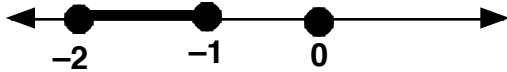
1. $x \in \mathfrak{R}: x \in (-\infty, -5] \text{ or } [1, \infty)$



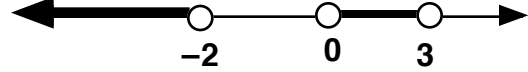
2. $x \in \mathfrak{R}: x \in (-\infty, -16) \text{ or } (3, \infty)$



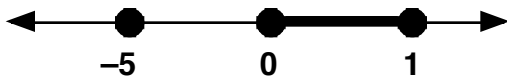
3. $x \in \mathfrak{R}: x \in [-2, -1] \text{ or } x = 0$



4. $x \in \mathfrak{R}: x \in (-\infty, -2) \text{ or } (0, 3)$



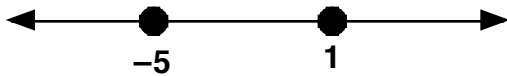
5. $x \in \mathfrak{R}: x = -5 \text{ or } x \in [0, 1]$



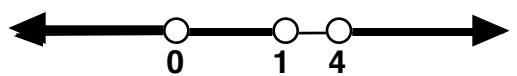
6. $x \in \mathfrak{R}: x \in (-\infty, 0]$



7. $x \in \mathfrak{R}: x = -5 \text{ or } x = 1$



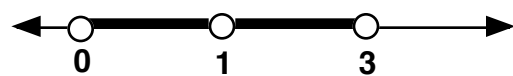
8. $x \in \mathfrak{R}: x \in (-\infty, 0) \text{ or } (0, 1) \text{ or } (4, \infty)$



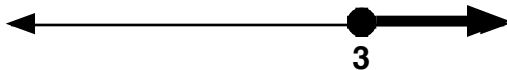
9. $x \in \mathfrak{R}: x \in (-\infty, -4] \text{ or } [-1, 2]$



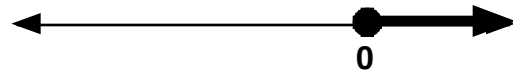
10. $x \in \mathfrak{R}: x \in (0, 1) \text{ or } (1, 3)$



11. $x \in \mathfrak{R}: x \in [3, \infty)$



12. $x \in \mathfrak{R}: x \in [0, \infty)$

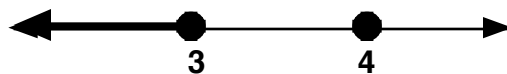


13. $x \in \mathfrak{R}: x \in [1, \infty)$

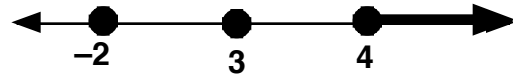


14. No real Numbers

15. $x \in \mathfrak{R}: x \in (-\infty, 3] \text{ or } x = 4$



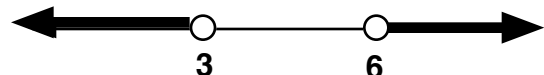
16. $x \in \mathfrak{R}: x \in x = -2 \text{ or } x = 3 \text{ or } [4, \infty)$



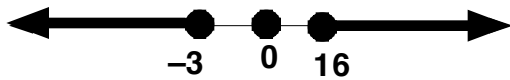
17. $x \in \mathfrak{R}: x \in [-4, 5]$



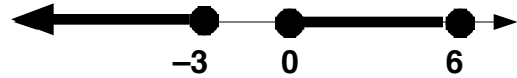
18. $x \in \mathfrak{R}: x \in (-\infty, 3) \text{ or } (6, \infty)$



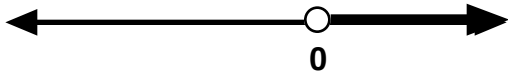
19. $x \in \mathfrak{R}: x \in (-\infty, -3] \text{ or } [16, \infty) \text{ or } 0$



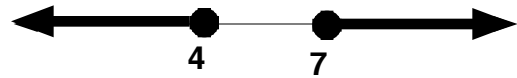
20. $x \in \mathfrak{R}: x \in (-\infty, -3] \text{ or } [0, 6]$



21. $x \in \mathfrak{R}: x \in (0, \infty)$



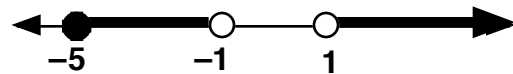
22. $x \in \mathfrak{R}: x \in (-\infty, 4] \text{ or } [7, \infty)$



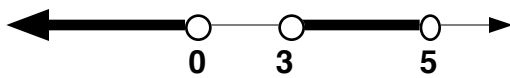
23. $x \in \mathfrak{R}: x \in (-\infty, -3) \text{ or } [2, \infty)$



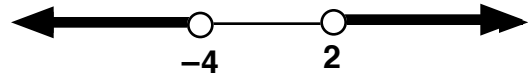
24. $x \in \mathfrak{R}: x \in (-\infty, 9]$



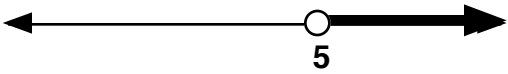
25. $x \in \mathfrak{R}: x \in (-\infty, 0) \text{ or } (3, 5)$



26. $x \in \mathfrak{R}: x \in (-\infty, -4) \text{ or } (2, \infty)$



27. $x \in \mathfrak{R}: x \in (5, \infty)$



28. $x \in \mathfrak{R}: x \in (-\infty, -4] \text{ or } (-2, 1] \text{ or } (2, \infty)$



29. $x \in \mathfrak{R}: x \in (-\infty, 0] \text{ or } [1, 3) \text{ or } (3, \infty)$



30. $x \in \mathfrak{R}: x \in [-2, \infty)$

