

Absolute Value Equations and Inequalities

Solve for x and write your answers in set notation.

1. $|4 + 3x| = 12$

2. $|2 + 3x| = 7$

3. $|2 - x| = 12$

4. $|5 - x| = 6$

5. $\left|\frac{x+2}{6}\right| = 3$

6. $\left|\frac{x+5}{4}\right| = 2$

7. $\left|\frac{5}{x-3}\right| = 7$

8. $\left|\frac{2}{x+4}\right| = 5$

9. $\left|\frac{x+6}{x-2}\right| = 1$

10. $\left|\frac{x-6}{x+3}\right| = 4$

11. $\left|\frac{x}{5}\right| = \frac{2}{3}$

12. $\left|\frac{x}{4}\right| = \frac{4}{3}$

13. $|4x - 3| + 2 = 8$

14. $|2x + 5| + 7 = 12$

15. $|3 - 2x| + 5 = 9$

16. $|7 - 4x| + 6 = 11$

17. $|5x + 7| = |x - 1|$

18. $|3x + 5| = |x - 4|$

19. $|5 - 4x| = |3 - 4x|$

20. $|4 - x| = |5 - x|$

Solve for x and write your answers in interval notation.

21. $|2x + 5| < 3$

22. $|3x - 4| < 2$

23. $|2x + 5| \geq 3$

24. $|3x - 4| \geq 2$

25. $\left|x - \frac{1}{2}\right| \geq 4$

26. $\left|x - \frac{1}{4}\right| \geq 3$

27. $\left|x + \frac{2}{5}\right| \leq 1$

28. $\left|x + \frac{1}{5}\right| \leq 4$

29. $3|x - 7| > 12$

30. $3|x - 5| > 15$

31. $6|4 - x| \leq 18$

32. $7|4 - x| \leq 28$

33. $|5x + 2| < 8$

34. $|3x + 2| < 12$

35. $\left|\frac{3}{4}x - 5\right| \geq \frac{1}{2}$

36. $\left|\frac{2}{3}x - 2\right| \geq \frac{3}{2}$