Name: Due Date: Teacher: Parent Sign:

Questions

1. How many solutions does 2x + 3 = 7 have?

2. How many solutions does 3x - 5 = 10 have?

3. How many solutions does 4x + 2 = 4x + 7 have?

4. How many solutions does 5x - 1 = 2x + 8 have?

5. How many solutions does $\frac{x}{2}$ + 4 = 9 have?

6. How many solutions does 0x + 6 = 6 have?

7. How many solutions does 0x + 5 = 0 have?

8. How many solutions does 7x + 3 = 3 + 7x have?

9. How many solutions does 2(x + 1) = 2x + 2 have?

10. How many solutions does 3(x - 2) = 3x - 5 have?

11. How many solutions does 0.5x + 2 = 0.5x + 2 have?

12. How many solutions does $(\frac{1}{3})$x + 1 = $(\frac{1}{3})$x + 2 have?

13. How many solutions does 6x - 9 = 0 have?

14. How many solutions does -4x + 8 = 8 - 4x have?

15. How many solutions does 9 = 3x + 3 have?

16. How many solutions does 2x + 4 = 2(x + 3) have?

17. How many solutions does 5(x - 1) = 5x - 5 have?

18. How many solutions does 2x + 3 = 2x - 3 have?

19. How many solutions does x + 7 = 12 have?

20. How many solutions does 3(x + 2) = 3x + 7 have?

Worked-example questions (show steps)

21. Worked example A: Determine the number of solutions and show steps for 2x + 3 = 2x + 3.

22. Worked example B: Determine the number of solutions and show steps for 4(x - 2) = 4x - 9.

Create an equation with no solutions

23. Write a linear equation in x that has no solutions (one example).

24. Write a linear equation with fractions that has no solutions.

25. Write a linear equation with decimals that has no solutions.

26. Write an equation where both sides simplify to different constants (no solutions).

27. Create a linear equation with variables on both sides that has no solutions.

28. Create an equation of the form ax + b = ax + c that has no solutions (give numbers).

29. Create a 0-coefficient equation that has no solutions (use 0x).

30. Create an equation with whole-number coefficients that has no solutions.

31. Create an equation using parentheses that results in no solutions.

32. Create an equation where simplifying gives $5 = 0$ (no solutions).

Create an equation with infinitely many solutions

33. Write a linear equation in x that has infinitely many solutions (one example).

34. Write a linear equation with fractions that has infinitely many solutions.

35. Write a linear equation with decimals that has infinitely many solutions.

36. Create an equation where both sides simplify to the same expression (infinitely many).

37. Create an equation of the form ax + b = ax + b that has infinitely many solutions (give numbers).

38. Create a 0-coefficient equation that has infinitely many solutions (use 0x).

39. Create an equation with whole-number coefficients that has infinitely many solutions.

40. Create an equation using parentheses that results in infinitely many solutions.

41. Create an equation where simplifying gives $0 = 0$ (infinitely many solutions).

42. Create a linear equation with variables on both sides that has infinitely many solutions.

More "determine number of solutions" practice

43. How many solutions does 8x - 4 = 12 have?

44. How many solutions does $2(x + 3) = 2x + 5$ have?

45. How many solutions does $(\frac{3}{4})x + 2 = (\frac{3}{4})x + 2$ have?

46. How many solutions does -2x + 5 = 5 - 2x have?

47. How many solutions does $10 = 2(x + 5)$ have?

48. How many solutions does $0x = 0$ have?

49. How many solutions does $0x = 7$ have?

50. How many solutions does x - 4 = 0 have?