Linear equations Worksheet

Algebra

Name _____ Date _____

Warm-up

1. Is $x = 2$ a solution of $4x - 6 = 2$?
   (A) Yes (B) No

2. Solve: $2x + 1 = 15$

3. Solve: $\frac{x}{7} - 9 = -8$

4. Solving an equation left you with $9 = 13$. What does that mean?
   (A) $x = 9$ (B) Infinitely many (C) No solution (D) One solution

5. Translate: "7 more than twice a number is 15."
   (A) $2(x + 7) = 15$ (B) $7x + 2 = 15$ (C) $2x + 7 = 15$ (D) $2x - 7 = 15$

Practice

6. Which value makes $5x - 6 = -11$ true?
   (A) $x = 0$ (B) $x = -5$ (C) $x = -1$ (D) $x = -3$

7. Solve: $7x - 11 = 6x - 3$

8. Solve: $0.2x + 2 = 14$

© No Limit Math. Free for personal and classroom use.

9. How many solutions does $6(x+2) = 6x + 12$ have?
   (A) Infinitely many (B) None (C) Two (D) One

10. Three consecutive numbers add up to 93. What's the smallest?

11. Solve $A = \frac{1}{2}bh$ for h.

12. Which equation has $x = 8$ as a solution?
   (A) $6x - 3 = 51$ (B) $6x + 3 = 51$ (C) $x + 3 = 51$ (D) $6x + 3 = 52$

13. Solve: $3(x - 6) = x - 10$

Challenge

14. If $x + 9 = 8$, what is $(x + 9)^2 + x + 9$?

15. Solve: $5(x - 5) - (x + 1) = 2x - 24$

16. Solve: $\frac{x-1}{4} = \frac{x+5}{3}$

17. For what value of k does $8x + 3 = kx + 13$ have no solution?

18. A train leaves at 52 km/h. Another leaves on the same track 3 hours later at 78 km/h. How many hours after the second leaves does it catch up?

© No Limit Math. Free for personal and classroom use.

Linear equations Worksheet: Answer Key

Algebra

1. (A) Yes

   $4(2) - 6 = 2$, so both sides match.

2. 7

   Undo 1 first, then divide by 2.

3. 7

   Undo -9, then multiply by 7.

4. (C) No solution

   That's false no matter what x is.

5. (C) $2x + 7 = 15$

   Twice a number is $2x$, and 7 more adds 7.

6. (C) $x = -1$

   Substitute: $5(-1) - 6 = -11$.

7. 8

   Subtract $6x$ from both sides first.

8. 60

   Multiply everything by 10: $2x + 20 = 140$.

9. (A) Infinitely many

   Distributing gives the same expression on both sides.

10. 30

    $x + (x + 1) + (x + 2) = 93$.

11. $h = \dfrac{2A}{b}$

    Multiply by 2, then divide by b.

12. (B) $6x + 3 = 51$

    Test each one by substituting. Only the first gives a true statement.

13. 4

    Distribute first: $3x - 18$.

14. 72

    Replace $x + 9$ with 8: $8^2 + 8$.

15. 1

    Expand both products, combine, then gather.

© No Limit Math. Free for personal and classroom use.

16. -23

    Cross multiply: $3(x-1) = 4(x+5)$.

17. 8

    No solution means the x terms cancel but the numbers don't, so $k = 8$.

18. 6

    $52(t+3) = 78t$.

Stuck on something? Book a free 20-minute consultation at nolimitmath.com/book.