

5. Linear Equations and Inequalities

Solve for the variable:

1. $3(2x - 4) - 5(x + 2) = 7(x - 8) - 2(x - 3)$
 $6x - 12 - 5x - 10 = 7x - 56 - 2x + 6$
 $x - 22 = 5x - 50$
 $-4x = -28$
 $x = 7$

2. $2(3x - 4) + 5(x + 2) = 7(x - 8) - 2(x - 3)$
 $6x - 8 + 5x + 10 = 7x - 56 - 2x + 6$
 $11x + 2 = 5x - 50$
 $6x = -52$
 $x = -\frac{26}{3}$

3. $4(2x - 3) - 5(x + 2) = 7(x - 8) - 2(x - 3)$
 $8x - 12 - 5x - 10 = 7x - 56 - 2x + 6$
 $3x - 22 = 5x - 50$
 $-2x = -28$
 $x = 14$

4. $3(2x - 4) - 5(x + 2) = 7(x - 8) - 2(x - 3)$
 $6x - 12 - 5x - 10 = 7x - 56 - 2x + 6$
 $x - 22 = 5x - 50$
 $-4x = -28$
 $x = 7$

5. $2(3x - 4) + 5(x + 2) = 7(x - 8) - 2(x - 3)$
 $6x - 8 + 5x + 10 = 7x - 56 - 2x + 6$
 $11x + 2 = 5x - 50$
 $6x = -52$
 $x = -\frac{26}{3}$

6. $4(2x - 3) - 5(x + 2) = 7(x - 8) - 2(x - 3)$
 $8x - 12 - 5x - 10 = 7x - 56 - 2x + 6$
 $3x - 22 = 5x - 50$
 $-2x = -28$
 $x = 14$

7. $3(2x - 4) - 5(x + 2) = 7(x - 8) - 2(x - 3)$
 $6x - 12 - 5x - 10 = 7x - 56 - 2x + 6$
 $x - 22 = 5x - 50$
 $-4x = -28$
 $x = 7$

8. $2(3x - 4) + 5(x + 2) = 7(x - 8) - 2(x - 3)$
 $6x - 8 + 5x + 10 = 7x - 56 - 2x + 6$
 $11x + 2 = 5x - 50$
 $6x = -52$
 $x = -\frac{26}{3}$

9. $4(2x - 3) - 5(x + 2) = 7(x - 8) - 2(x - 3)$
 $8x - 12 - 5x - 10 = 7x - 56 - 2x + 6$
 $3x - 22 = 5x - 50$
 $-2x = -28$
 $x = 14$

10. $3(2x - 4) - 5(x + 2) = 7(x - 8) - 2(x - 3)$
 $6x - 12 - 5x - 10 = 7x - 56 - 2x + 6$
 $x - 22 = 5x - 50$
 $-4x = -28$
 $x = 7$

11. $2(3x - 4) + 5(x + 2) = 7(x - 8) - 2(x - 3)$
 $6x - 8 + 5x + 10 = 7x - 56 - 2x + 6$
 $11x + 2 = 5x - 50$
 $6x = -52$
 $x = -\frac{26}{3}$

12. $4(2x - 3) - 5(x + 2) = 7(x - 8) - 2(x - 3)$
 $8x - 12 - 5x - 10 = 7x - 56 - 2x + 6$
 $3x - 22 = 5x - 50$
 $-2x = -28$
 $x = 14$