

Substitution to Solve Polynomials

No Calculator

Solve each of the following for x:

1. $(x + 2)^2 - 4(x + 2) - 5 = 0$

2. $(x - 4)^2 - 5(x - 4) + 6 = 0$

3. $(x - 8)^2 - 3(x - 8) + 2 = 0$

4. $(x - 3)^2 - 15(x - 3) + 54 = 0$

5. $(x - 7)^2 + 8(x - 7) + 12 = 0$

6. $(x - 3)^2 - 2(x - 3) - 3 = 0$

7. $(x - 6)^2 - 3(x - 6) - 18 = 0$

8. $(x + 8)^2 - 25 = 0$

9. $(x - 5)^2 - 10(x - 5) + 24 = 0$

10. $(x + 5)^2 + 11(x + 5) + 18 = 0$

11. $(x + 7)^2 + 12(x + 7) + 27 = 0$

12. $(x + 4)^2 + 12(x + 4) + 35 = 0$

13. $(x + 2)^2 - (x + 2) - 2 = 0$

14. $(x + 3)^2 - 10(x + 3) + 21 = 0$

15. $(x + 3)^2 + 13(x + 3) + 40 = 0$

16. $(x + 3)^2 + 2(x + 3) - 3 = 0$

17. $(x - 7)^2 + 5(x - 7) - 24 = 0$

18. $(x - 1)^2 - 4 = 0$

19. $(x + 2)^2 - 6(x + 2) + 8 = 0$

20. $(x - 7)^2 + 3(x - 7) - 10 = 0$

21. $(x + 5)^2 - 13(x + 5) + 36 = 0$

22. $(x + 3)^2 + 2(x + 3) - 8 = 0$

23. $(x - 6)^2 - 2(x - 6) - 15 = 0$

24. $(x + 2)^2 + 12(x + 2) + 27 = 0$

Answers

1. $x=-7$, $x=-1$
2. $x=1$, $x=2$
3. $x=6$, $x=7$
4. $x=-6$, $x=-3$
5. $x=9$, $x=13$
6. $x=0$, $x=4$
7. $x=0$, $x=9$
8. $x=-3$, $x=-13$
9. $x=1$, $x=-1$
10. $x=-3$, $x=4$
11. $x=2$, $x=-4$
12. $x=1$, $x=3$
13. $x=-4$, $x=-1$
14. $x=-6$, $x=-10$
15. $x=5$, $x=2$
16. $x=0$, $x=-4$
17. $x=15$, $x=4$
18. $x=-1$, $x=3$
19. $x=-4$, $x=-6$
20. $x=5$, $x=12$
21. $x=-9$, $x=-14$
22. $x=-5$, $x=1$
23. $x=9$, $x=1$
24. $x=1$, $x=7$