Solving Quadratic Equations, Zero Product Property

Algorithm

1. **Place everything on one side, zero on the other side of the equal sign**
2. **Factor completely**
3. **Set each factor equal to zero**
4. **Solve the resulting equations**

Example **Solve by factoring:** $x^2 = 23x + 24$

1. $x^2 - 23x - 24 = 0$
2. $(x - 24)(x + 1) = 0$
3. $x - 24 = 0$ or $x + 1 = 0$
4. $x = 24$ $x = -1$

Solve the following quadratic equations using the Zero Product Property

1. $x^2 + 7x + 12 = 0$
2. $x^2 + 9x + 20 = 0$
3. $x^2 + 6x + 5 = 0$
4. $x^2 + 8x + 12 = 0$
5. $x^2 + 7x + 10 = 0$
6. $x^2 + 11x + 10 = 0$
7. $x^2 - 5x + 6 = 0$
8. $x^2 = 8x - 15$
9. $x^2 + 18 = 9x$
10. $x^2 - 9x + 20 = 0$

11. $x^2 - 2x = -1$

12. $x^2 - 5x + 4 = 0$

13. $x^2 - x = 20$

14. $x^2 + 3x = 40$

15. $x^2 = x + 6 = 0$

16. $x^2 + 4x = 45$

17. $x^2 - 3x - 70 = 0$

18. $x^2 + 9x - 10 = 0$

19. $x^2 + 5x = -4$

20. $x^2 + 2x = 3$

21. $x^2 = 5x - 4$

22. $x^2 = 15 - 2x$

23. $2x^2 + 5x + 2 = 0$

24. $6x^2 + 10x - 4 = 0$

25. $3x^2 + x - 2 = 0$

26. $8y^2 + 3y = 3$