

Homework: Quadratic Equations - Key

In Problems 1-4, solve each equation by factoring

1. $-3, 7$	2. $\frac{-1}{4}, \frac{-3}{2}$
3. $0, 2$	4. $1, 2$

In Problems 5-9, solve each equation by the square root property

5. $\pm\sqrt{3}$	6. $-3, -11$
7. $1 \pm 3i$	8. $\frac{4}{5}, 0$
9. $\frac{5 \pm 2\sqrt{3}}{6}$	

In Problems 10-12, determine the constant that should be added to the binomial so that it becomes a perfect square trinomial. Then write and factor the trinomial

10. $16, (x-4)^2$	11. $\frac{25}{4}, \left(x - \frac{5}{2}\right)^2$
12. $\frac{1}{100}, \left(x + \frac{1}{10}\right)^2$	

In Problems 13-16, solve each equation by completing the square

13. $-2 \pm \sqrt{7}$	14. $-3 \pm 2\sqrt{2}$
15. $\frac{-5 \pm \sqrt{33}}{2}$	16. $\frac{5 \pm \sqrt{85}}{10}$

In Problems 17-19, solve each equation using the quadratic formula

Homework: Quadratic Equations - Key

17. $-2, -6$	18. $\frac{1 \pm \sqrt{6}}{5}$
19. $1 \pm \sqrt{7}i$	

In Problems 20-21, compute the discriminant. Then determine the number and type of solutions for the given equation

20. 88, 2 real distinct answers	21. -63, 2 answers that have "i"s
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In Problems 22-27, solve each equation by the method of your choice

22. $2 \pm \sqrt{14}i$	23. $\frac{3 \pm \sqrt{13}}{2}$
24. $\frac{4}{3}, -2$	25. $-2, 2$
26. $4 \pm \sqrt{14}$	27. $\pm 2\sqrt{2}$

Homework: Quadratic Equations - Key

In Problems 25-28, factor using the formula for the sum or difference of two cubes

25. $(x+2)(x^2-2x+4)$	26. $(x-5)(x^2+5x+25)$
27. $(3x-2)(9x^2+6x+4)$	28. $(2x+3y)(4x^2-6xy+9y^2)$

In Problems 29-31, factor completely

29. $5x(x+2)(x-2)$	30. $5(x-4)(x+1)$
31. $(x+7)(x+2)(x-2)$	