

Algebra 2
Completing the Square

Name: _____
Period: _____

Add the number needed to complete the square. Then, write the result as the square of a binomial.

1. $x^2 + 2x + \dots$ 2. $x^2 - 2x + \dots$ 3. $x^2 - 6x + \dots$ 4. $x^2 + 8x + \dots$ 5. $x^2 - 10x + \dots$
6. $x^2 + 4x + \dots$ 7. $x^2 + 12x + \dots$ 8. $x^2 - 14x + \dots$ 9. $x^2 + 36x + \dots$ 10. $x^2 - 64x + \dots$

Rewrite in vertex form by completing the square.

11. $f(x) = x^2 - 16x + 6$ 12. $f(x) = x^2 + 2x + 8$ 13. $f(x) = x^2 - 20x + 4$ 14. $f(x) = x^2 + 12x - 9$
15. $f(x) = x^2 - 32x + 100$ 16. $f(x) = x^2 + 50x - 3$ 17. $f(x) = x^2 + 4x - 6$ 18. $f(x) = x^2 - 6x - 13$

Solve by completing the square.

19. $x^2 - 8x = 65$ 20. $c^2 - 12c = -38$ 21. $a^2 + 16 = -10a$ 22. $m^2 = -20m - 64$
23. $b^2 - 18b + 47 = -10$ 24. $h^2 + 14h + 3 = 4$ 25. $3m^2 - 8m - 2 = 2m^2 + 14$

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