

Algebra 2
Completing the Square #2

Name: _____
Period: _____

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

1. $x^2 + 11x + \dots$ 2. $x^2 - \frac{1}{4}x + \dots$ 3. $x^2 + \frac{5}{6}x + \dots$ 4. $x^2 - \frac{5}{3}x + \dots$ 5. $2x^2 + 4x + \dots$
6. $4x^2 - 40x + \dots$ 7. $2x^2 - 28x + \dots$ 8. $3x^2 + 108x + \dots$ 9. $5x^2 - 320x + \dots$

Rewrite in vertex form by completing the square.

10. $f(x) = x^2 + x - 5$ 11. $f(x) = x^2 - 9x + 18$ 12. $f(x) = x^2 + 3x - 14$ 13. $f(x) = x^2 - \frac{7}{4}x - 4$
14. $f(x) = 2x^2 - 12x + 16$ 15. $f(x) = -4x^2 - 40x - 40$ 16. $f(x) = 5x^2 - 15x - 21$ 17. $f(x) = -3x^2 - 30x - 80$

Solve by completing the square.

18. $x^2 = 9x - 11$ 19. $x^2 - 2 = x$ 20. $5 - \frac{9}{2}x = x^2$ 21. $x^2 - 11x = \frac{3}{4}$ 22. $2x^2 - 8x + 6 = 0$
23. $4x^2 + 28 = 20x$ 24. $5x^2 - 35x + 40 = -20$ 25. $4x^2 + 34x + 40 = x^2 + 10x - 5$ 26. $4x^2 - 5 = -8x$

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