Name _____  Date _____

# Practice 82

For use with Section 10-7

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Factor each trinomial.

1. $x^2 + 3x + 2$
2. $x^2 + 7x + 10$
3. $x^2 + 8x + 12$
4. $x^2 - 11x + 18$
5. $x^2 - 10x + 24$
6. $x^2 + 9x + 14$
7. $x^2 - 9x + 20$
8. $x^2 - x - 6$
9. $x^2 - 2x - 15$
10. $x^2 + 3x - 10$
11. $x^2 + 8x + 15$
12. $x^2 - 5x - 6$
13. $x^2 + 4x - 21$
14. $x^2 - 12x + 27$
15. $x^2 - 3x - 40$
16. $x^2 - 5x - 24$
17. $x^2 + 7x - 18$
18. $x^2 - 11x + 28$

Factor each trinomial that can be factored using integers, or write *unfactorable*.

19. $x^2 - 6x + 8$
20. $x^2 - x + 12$
21. $x^2 + 5x - 4$
22. $x^2 - 9x + 20$
23. $x^2 + 3x - 18$
24. $x^2 - 6x + 16$
25. $x^2 + 10x - 24$
26. $x^2 + 10x + 24$
27. $x^2 - 4x + 12$

For Exercises 28–33, use the line of symmetry, the vertex, and the intercepts to sketch the graph of each equation.

28. $y = x^2 - 3x - 4$
29. $y = x^2 + x - 6$
30. $y = x^2 - 5x + 6$
31. $y = x^2 + 2x - 8$
32. $y = x^2 - 6x + 8$
33. $y = x^2 + 8x + 12$

34. The Chens enlarged their square kitchen by a whole number of feet in each direction. Margaret Chen said to her husband, "Suppose the length of each side of our old kitchen was $x$ ft. Then our new kitchen has an area equal to $x^2 + 11x + 30$ square feet." By how many feet did the Chens enlarge their kitchen in each direction?
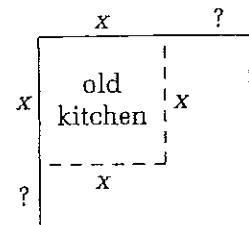


35. Lynn launched a model rocket straight up. The initial velocity of the rocket when it left the ground was 160 ft/s. The height $h$ of the rocket $t$ seconds after launch is given by the formula $h = 160t - 16t^2$. How many seconds will it take the rocket to hit the ground?