

Practice 7-3

Form K

Factoring $x^2 + bx + c$

Complete.

1. $n^2 + 9n + 18 = (n + 3)(n + \boxed{6})$

2. $t^2 + 9t + 14 = (t + 2)(t + \boxed{7})$

3. $d^2 + 11d + 30 = (d + 5)(d + \boxed{6})$

4. $v^2 + 2v + 1 = (v + 1)(v + \boxed{1})$

5. $m^2 - 8m + 15 = (m - 5)(m - \boxed{3})$

6. $a^2 - 13a + 22 = (a - 2)(a - \boxed{11})$

7. $z^2 - 17z + 72 = (z - 8)(z - \boxed{9})$

8. $w^2 - 7w + 12 = (w - 3)(w - \boxed{4})$

Factor each expression. Check your answer.

9. $g^2 + 6g + 8$
 $(g+2)(g+4)$

10. $y^2 + 10y + 24$
 $(y+4)(y+6)$

11. $r^2 + 12r + 35$
 $(r+5)(r+7)$

12. $k^2 + 9k + 8$
 $(k+1)(k+8)$

13. $x^2 - 16x + 60$
 $(x-6)(x-10)$

14. $h^2 - 19h + 78$
 $(h-6)(h-13)$

Complete.

15. $g^2 + 5g - 24 = (g - 3)(g + \boxed{8})$

1.24
2.12
-3+8
+9=5

16. $b^2 - 6b - 7 = (b - 7)(b + \boxed{1})$

-7+1

17. $y^2 + 4y - 45 = (y + 9)(y - \boxed{5})$

18. $k^2 + 4k - 12 = (k + 6)(k - \boxed{2})$

+6-2

19. $p^2 - 7p - 60 = (p + 5)(p - \boxed{12})$

+5-12

20. $n^2 - 6n - 40 = (n - 10)(n + \boxed{4})$

-10+4

Practice (continued)

Form K

Factoring $x^2 + bx + c$

Factor each expression. Check your answer.

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

$(x-5)(x+1)$

22. $t^2 + t - 20$

$(t+5)(t-4)$

23. $z^2 - z - 72$

$(z-9)(z+8)$

24. $m^2 - 6m - 27$

$(m-9)(m+3)$

25. $a^2 + 4a - 21$

$(a+7)(a-3)$

26. $v^2 - 4v - 12$

$(v-6)(v+2)$

27. $c^2 - 7c - 44$

$(c-11)(c+4)$

28. $r^2 + 6r - 16$

$(r+8)(r-2)$

29. $f^2 + f - 6$

$(f+3)(f-2)$

30. $j^2 - 6j - 55$

$(j-11)(j+5)$

31. $y^2 + 3y - 54$

$(y+9)(y-6)$

32. $n^2 - 10n - 11$

$(n-11)(n+1)$

33. The area of a rectangular window is given by the trinomial $x^2 - 14x + 48$. The window's length is $(x - 8)$. What is the window's width?

$x-8$ $x^2 - 14x + 48$

$(x-8)(x-6)$ width

34. The area of a rectangular rug is given by the trinomial $f^2 - 4f - 77$. The length of the rug is $(f + 7)$. What is the width of the rug?

$(f+7)(f-11) = f^2 - 4f - 77$

35. Reasoning Write possible expressions for the length and the width of a rectangle with area $x^2 + 13x + 42$.

$(x+7)(x+6)$

36. A rectangular tabletop has an area of $t^2 + 2t - 99$. What are possible dimensions of the tabletop? Use factoring.

$(t+11)(t-9)$