




9.5 EXERCISES

HOMEWORK KEY

-  = **WORKED-OUT SOLUTIONS**
on p. WS1 for Exs. 7 and 61
-  = **TAKS PRACTICE AND REASONING**
Exs. 29, 42, 61, 62, 63, 66, and 67
-  = **MULTIPLE REPRESENTATIONS**
Ex. 64

SKILL PRACTICE

1. **VOCABULARY** Copy and complete: The ? of $t^2 + 2t + 3$ are $t + 2$ and $t + 1$.
2. **WRITING** If $x^2 - 8x + 12 = (x + p)(x + q)$, what are the signs of p and q ? *Justify* your answer.

EXAMPLES 1, 2, and 3

on pp. 583–584
for Exs. 3–19

FACTORING TRINOMIALS Factor the trinomial.

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|----------------------|----------------------|----------------------|
| 3. $x^2 + 4x + 3$ | 4. $a^2 + 6a + 8$ | 5. $b^2 - 17b + 72$ |
| 6. $s^2 - 10s + 16$ | 7. $z^2 + 8z - 48$ | 8. $w^2 + 18w + 56$ |
| 9. $y^2 - 7y - 18$ | 10. $n^2 - 9n + 14$ | 11. $x^2 + 3x - 70$ |
| 12. $f^2 + 4f - 32$ | 13. $m^2 - 7m - 120$ | 14. $d^2 - 20d + 99$ |
| 15. $p^2 + 20p + 64$ | 16. $x^2 + 6x - 72$ | 17. $c^2 + 15c + 44$ |

ERROR ANALYSIS Describe and correct the error in factoring the trinomial.

18.

$$s^2 - 17s - 60 = (s - 5)(s - 12)$$



19.

$$m^2 - 10m + 24 = (m - 12)(m + 2)$$



EXAMPLE 4

on p. 585
for Exs. 20–29

SOLVING EQUATIONS Solve the equation.

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|--------------------------|-------------------------|--------------------------|
| 20. $x^2 - 10x + 21 = 0$ | 21. $n^2 - 7n - 30 = 0$ | 22. $w^2 - 15w + 44 = 0$ |
| 23. $a^2 + 5a = 50$ | 24. $r^2 + 2r = 24$ | 25. $t^2 + 9t = -20$ |
| 26. $y^2 - 2y - 8 = 7$ | 27. $m^2 + 22 = -23m$ | 28. $b^2 + 5 = 8b - 10$ |

29.  **TAKS REASONING** What are the solutions of the equation $x^2 - 8x = 240$?

- | | |
|-----------------|----------------|
| (A) -20 and -12 | (B) -20 and 12 |
| (C) 20 and -12 | (D) 12 and 20 |

FINDING ZEROS OF FUNCTIONS Find the zeros of the polynomial function.

- | | | |
|-----------------------------|------------------------------|-------------------------------|
| 30. $f(x) = x^2 + 11x + 18$ | 31. $g(x) = x^2 + 5x + 6$ | 32. $h(x) = x^2 - 18x + 32$ |
| 33. $f(x) = x^2 - 14x + 45$ | 34. $h(x) = x^2 - 5x - 24$ | 35. $g(x) = x^2 - 14x - 51$ |
| 36. $g(x) = x^2 + 10x - 39$ | 37. $f(x) = -x^2 + 16x - 28$ | 38. $f(x) = -x^2 + 24x + 180$ |

SOLVING EQUATIONS Solve the equation.

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|---------------------|-----------------------------|-----------------------|
| 39. $s(s + 1) = 72$ | 40. $x^2 - 10(x - 1) = -11$ | 41. $q(q + 19) = -34$ |
|---------------------|-----------------------------|-----------------------|