

6-3

Skills Practice

Solving Quadratic Equations by Factoring

Solve each equation by factoring.

1. $x^2 = 64$

$(x+8)(x-8)$
 $x=8$ $x=-8$

3. $x^2 - 3x + 2 = 0$

$(x-2)(x-1)$
 $x=2$ $x=1$

5. $x^2 + 2x - 3 = 0$

$(x-1)(x+3)$ $x=1$ $x=-3$

7. $x^2 - 6x + 5 = 0$

$(x-5)(x-1)$ $x=5$ $x=1$

9. $-x^2 + 6x = 0$

$-x(x-6)$ $x=0$ $x=6$

11. $x^2 = -5x$

$x^2 + 5x = 0$
 $x(x+5)$ $x=0$ $x=-5$

13. $x^2 + 6 = 5x$

$x^2 - 5x + 6$ $(x-3)(x-2)$ $x=3$ $x=2$

15. $x^2 - 4x = 21$

$x^2 - 4x - 21$ $(x-7)(x+3)$ $x=7$ $x=-3$

17. $4x^2 + 5x - 6 = 0$

$x^2 + 5x - 24 = 0$
 $(x-3)(x+8)$ $x=3$ $x=-8$

2. $x^2 - 100 = 0$

$(x+10)(x-10)$ $x=10$ $x=-10$

4. $x^2 - 4x + 3 = 0$

$(x-3)(x-1)$ $x=3$ $x=1$

6. $x^2 - 3x - 10 = 0$

$(x-5)(x+2)$ $x=5$ $x=-2$

8. $x^2 - 9x = 0$

$x(x-9)$ $x=0$ $x=9$

10. $x^2 + 6x + 8 = 0$

$(x+4)(x+2)$ $x=-4$ $x=-2$

12. $x^2 - 14x + 49 = 0$

$(x-7)(x-7)$ $x=7$

14. $x^2 + 18x = -81$

$x^2 + 18x + 81$ $(x+9)(x+9)$ $x=-9$

16. $2x^2 + 5x - 3 = 0$

$x^2 + 5x - 6$ $(x-1)(x+6)$ $x=1/2$

18. $3x^2 - 13x - 10 = 0$

$x^2 - 13x - 30 = 0$
 $(x-15)(x+2)$ $(3x+2)(x-5)$ $x=-2/3$ $x=5$

Write a quadratic equation with the given roots. Write the equation in the form $ax^2 + bx + c = 0$, where a , b , and c are integers.

19. 1, 4

$(x-1)(x-4)$ $x^2 - 5x + 4 = 0$

21. -2, -5

$x^2 - 4x - 1x + 4$
 $(x+2)(x+5)$ $x^2 + 7x + 10 = 0$

23. $-\frac{1}{3}, -3$

$(x+1/3)(x+3)$ $3x^2 + 10x + 3$

20. 6, -9

$x^2 + 9x - 6x - 54 = 0$
 $(x-6)(x+9)$ $x^2 + 3x - 54 = 0$

22. 0, 7

$x(x-7)$ $x^2 - 7x = 0$

24. $-\frac{1}{2}, \frac{3}{4}$

$(x+1/2)(x-3/4)$ $8x^2 - 6x + 4x - 3$

25. Find two consecutive integers whose product is 272.

$(2x+1)(4x-3)$ $8x^2 - 2x - 3 = 0$
 $16, 17$