

# Algebra I

## Review 8.4 - 8.6

Name \_\_\_\_\_

**Solve the equation.**

1.  $(x + 14)(x - 3) = 0$

2.  $(m - 12)(m + 5) = 0$

3.  $(p + 15)(p + 24) = 0$

4.  $(n - 8)(n - 9) = 0$

5.  $(d + 8)\left(d - \frac{1}{2}\right) = 0$

6.  $\left(c + \frac{3}{4}\right)(c - 6) = 0$

7.  $(2z - 8)(z + 5) = 0$

8.  $(y - 3)(5y + 10) = 0$

9.  $(6b - 4)(b - 8) = 0$

10.  $(8x + 4)(6x - 3) = 0$

11.  $(3x + 9)(6x - 3) = 0$

12.  $(4x + 5)(4x - 5) = 0$

**Factor out the greatest common monomial factor.**

13.  $10x - 10y$

14.  $8x^2 + 20y$

15.  $18a^2 - 6b$

16.  $4x^2 - 4x$

17.  $r^2 + 2rs$

18.  $2m^2 + 6mn$

19.  $5p^2q + 10q$

20.  $9a^5 + a^3$

21.  $6w^3 - 14w^2$

**Solve the equation.**

22.  $m^2 - 10m = 0$

23.  $b^2 + 14b = 0$

24.  $5w^2 - 5w = 0$

25.  $24k^2 + 24k = 0$

26.  $8r^2 - 24r = 0$

27.  $9p^2 + 18p = 0$

28.  $6n^2 - 15n = 0$

29.  $-8y^2 - 10y = 0$

30.  $-10b^2 + 25b = 0$

31.  $8c^2 = 4c$

32.  $30r^2 = -15r$

33.  $-24y^2 = 9y$

- 34. Diving Board** A diver jumps from a diving board that is 24 feet above the water. The height of the diver is given by
- $$h = -16(t - 1.5)(t + 1)$$
- where the height  $h$  is measured in feet, and the time  $t$  is measured in seconds. When will the diver hit the water? Can you see a quick way to find the answer? *Explain.*
- 35. Dog** To catch a frisbee, a dog leaps into the air with an initial velocity of 14 feet per second.
- Write a model for the height of the dog above the ground.
  - After how many seconds does the dog land on the ground?

LESSON  
**8.5**

**Factor the trinomial.**

- |                     |                     |                     |
|---------------------|---------------------|---------------------|
| 1. $x^2 + 8x + 7$   | 2. $b^2 - 7b + 10$  | 3. $w^2 - 12w - 13$ |
| 4. $p^2 + 10p + 25$ | 5. $m^2 - 10m + 24$ | 6. $y^2 - 5y - 24$  |
| 7. $a^2 + 13a + 36$ | 8. $n^2 + 2n - 48$  | 9. $z^2 - 14z + 40$ |

**Solve the equation.**

- |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|
| 10. $y^2 + 17y + 72 = 0$ | 11. $a^2 - 9a - 36 = 0$  | 12. $w^2 - 13w + 42 = 0$ |
| 13. $m^2 - 5m - 14 = 0$  | 14. $x^2 + 11x + 24 = 0$ | 15. $n^2 - 12n + 27 = 0$ |
| 16. $d^2 + 5d - 50 = 0$  | 17. $p^2 + 16p + 48 = 0$ | 18. $z^2 - z - 30 = 0$   |

**Find the zeros of the polynomial function.**

19.  $f(x) = x^2 - 5x - 36$

20.  $g(x) = x^2 + 8x - 20$

21.  $h(x) = x^2 - 11x + 24$

22.  $f(x) = x^2 + 11x + 28$

23.  $g(x) = x^2 + 11x - 12$

24.  $h(x) = x^2 + 3x - 18$

**Solve the equation.**

25.  $x(x + 17) = -60$

26.  $p(p - 4) = 32$

27.  $w(w + 8) = -15$

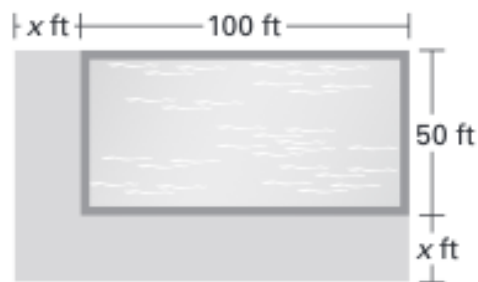
28.  $n(n + 6) = 7$

29.  $s^2 - 3(s + 2) = 4$

30.  $d^2 + 18(d + 4) = -9$

- 31. Patio Area** A community center is building a patio area along two sides of its pool. The pool is rectangular with a width of 50 feet and a length of 100 feet. The patio area will have the same width on each side of the pool.

- Write a polynomial that represents the combined area of the pool and the patio area.
- The combined area of the pool and patio area should be 8400 square feet. How wide should the patio area be?

**LESSON**  
**8.6****Factor the trinomial.**

1.  $-x^2 - 3x + 28$

2.  $-p^2 + 8p - 12$

3.  $-m^2 - 13m - 40$

4.  $2y^2 + 15y + 7$

5.  $3a^2 - 13a + 4$

6.  $5d^2 - 18d - 8$

**7.**  $6c^2 + 7c + 2$

**8.**  $10n^2 - 26n + 12$

**9.**  $12w^2 + 8w - 15$

**10.**  $-2b^2 - 5b + 12$

**11.**  $-3r^2 - 17r - 10$

**12.**  $-4s^2 + 6s + 4$

**Solve the equation.**

**13.**  $-x^2 + x + 20 = 0$

**14.**  $-m^2 - 10m - 16 = 0$

**15.**  $-p^2 + 13p - 42 = 0$

**16.**  $2c^2 - 11c + 5 = 0$

**17.**  $2y^2 + y - 10 = 0$

**18.**  $16r^2 + 18r + 5 = 0$

**19.**  $3w^2 + 19w + 6 = 0$

**20.**  $12n^2 - 11n + 2 = 0$

**21.**  $15a^2 - 2a - 8 = 0$

**22.**  $-2x^2 - 9x - 4 = 0$

**23.**  $-3s^2 - s + 10 = 0$

**24.**  $8d^2 - 6d - 5 = 0$

**Find the zeros of the polynomial function.**

**25.**  $f(x) = -x^2 + 6x + 27$

**26.**  $f(x) = 6x^2 + 45x - 24$

**27.**  $f(x) = -3x^2 - 14x + 24$

**28.**  $f(x) = -2x^2 + 2x + 4$

**29.**  $f(x) = 3x^2 - 17x + 20$

**30.**  $f(x) = 8x^2 + 53x - 21$

**31.**  $f(x) = 4x^2 + 29x + 30$

**32.**  $f(x) = -2x^2 - 17x + 30$

**33.**  $f(x) = 10x^2 + 5x - 5$



