

Solving Quadratic Equations (A)

Name: _____

Date: _____

Solve each equation for x.

1. $4x^2 + 20x + 9 = 0$

11. $-2x^2 - 11x + 40 = 0$

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

12. $x^2 + 10x + 16 = 0$

3. $x^2 - 9 = 0$

13. $3x^2 - 22x - 16 = 0$

4. $2x^2 + 13x + 18 = 0$

14. $4x^2 + 31x - 45 = 0$

5. $2x^2 - 25x + 63 = 0$

15. $-3x^2 + 11x + 42 = 0$

6. $-2x^2 + 11x - 14 = 0$

16. $3x^2 - 22x + 24 = 0$

7. $4x^2 + 17x - 15 = 0$

17. $-4x^2 - 5x - 1 = 0$

8. $-4x^2 + 12x + 27 = 0$

18. $4x^2 + 24x + 27 = 0$

9. $x^2 + 12x + 36 = 0$

19. $3x^2 + 13x - 30 = 0$

10. $-4x^2 - 20x - 25 = 0$

20. $-4x^2 + 7x + 36 = 0$

Solving Quadratic Equations (A) Answers

Name: _____

Date: _____

Solve each equation for x.

1. $4x^2 + 20x + 9 = 0$
 $(2x + 1)(2x + 9) = 0$
 $x = -\frac{1}{2}, -4\frac{1}{2}$

2. $3x^2 - 5x + 2 = 0$
 $(x - 1)(3x - 2) = 0$
 $x = 1, \frac{2}{3}$

3. $x^2 - 9 = 0$
 $(x + 3)(x - 3) = 0$
 $x = -3, 3$

4. $2x^2 + 13x + 18 = 0$
 $(2x + 9)(x + 2) = 0$
 $x = -4\frac{1}{2}, -2$

5. $2x^2 - 25x + 63 = 0$
 $(2x - 7)(x - 9) = 0$
 $x = 3\frac{1}{2}, 9$

6. $-2x^2 + 11x - 14 = 0$
 $-(x - 2)(2x - 7) = 0$
 $x = 2, 3\frac{1}{2}$

7. $4x^2 + 17x - 15 = 0$
 $(4x - 3)(x + 5) = 0$
 $x = \frac{3}{4}, -5$

8. $-4x^2 + 12x + 27 = 0$
 $-(2x + 3)(2x - 9) = 0$
 $x = -1\frac{1}{2}, 4\frac{1}{2}$

9. $x^2 + 12x + 36 = 0$
 $(x + 6)(x + 6) = (x + 6)^2 = 0$
 $x = -6$

10. $-4x^2 - 20x - 25 = 0$
 $-(2x + 5)(2x + 5) = -(2x + 5)^2 = 0$
 $x = -2\frac{1}{2}$

11. $-2x^2 - 11x + 40 = 0$
 $-(x + 8)(2x - 5) = 0$
 $x = -8, 2\frac{1}{2}$

12. $x^2 + 10x + 16 = 0$
 $(x + 8)(x + 2) = 0$
 $x = -8, -2$

13. $3x^2 - 22x - 16 = 0$
 $(3x + 2)(x - 8) = 0$
 $x = -\frac{2}{3}, 8$

14. $4x^2 + 31x - 45 = 0$
 $(4x - 5)(x + 9) = 0$
 $x = 1\frac{1}{4}, -9$

15. $-3x^2 + 11x + 42 = 0$
 $-(3x + 7)(x - 6) = 0$
 $x = -2\frac{1}{3}, 6$

16. $3x^2 - 22x + 24 = 0$
 $(x - 6)(3x - 4) = 0$
 $x = 6, 1\frac{1}{3}$

17. $-4x^2 - 5x - 1 = 0$
 $-(4x + 1)(x + 1) = 0$
 $x = -\frac{1}{4}, -1$

18. $4x^2 + 24x + 27 = 0$
 $(2x + 3)(2x + 9) = 0$
 $x = -1\frac{1}{2}, -4\frac{1}{2}$

19. $3x^2 + 13x - 30 = 0$
 $(x + 6)(3x - 5) = 0$
 $x = -6, 1\frac{2}{3}$

20. $-4x^2 + 7x + 36 = 0$
 $-(4x + 9)(x - 4) = 0$
 $x = -2\frac{1}{4}, 4$

Solving Quadratic Equations (B)

Name: _____

Date: _____

Solve each equation for x.

1. $-4x^2 + 8x - 3 = 0$

11. $-2x^2 - x + 3 = 0$

2. $-2x^2 + 11x + 63 = 0$

12. $4x^2 + 4x - 3 = 0$

3. $2x^2 + 7x + 3 = 0$

13. $2x^2 - 11x + 9 = 0$

4. $x^2 - 4x - 32 = 0$

14. $4x^2 + 35x - 9 = 0$

5. $3x^2 - 8x - 3 = 0$

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

6. $-4x^2 + 43x - 63 = 0$

16. $-x^2 - 7x - 12 = 0$

7. $-4x^2 - 23x + 72 = 0$

17. $2x^2 - 13x - 45 = 0$

8. $-3x^2 - 5x - 2 = 0$

18. $-2x^2 + 5x - 2 = 0$

9. $-3x^2 - 22x + 45 = 0$

19. $-3x^2 + 25x + 18 = 0$

10. $4x^2 - 35x - 9 = 0$

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

Solving Quadratic Equations (B) Answers

Name: _____

Date: _____

Solve each equation for x.

- $-4x^2 + 8x - 3 = 0$
 $-(2x - 1)(2x - 3) = 0$
 $x = \frac{1}{2}, 1\frac{1}{2}$
- $-2x^2 + 11x + 63 = 0$
 $-(x - 9)(2x + 7) = 0$
 $x = 9, -3\frac{1}{2}$
- $2x^2 + 7x + 3 = 0$
 $(2x + 1)(x + 3) = 0$
 $x = -\frac{1}{2}, -3$
- $x^2 - 4x - 32 = 0$
 $(x - 8)(x + 4) = 0$
 $x = 8, -4$
- $3x^2 - 8x - 3 = 0$
 $(x - 3)(3x + 1) = 0$
 $x = 3, -\frac{1}{3}$
- $-4x^2 + 43x - 63 = 0$
 $-(x - 9)(4x - 7) = 0$
 $x = 9, 1\frac{3}{4}$
- $-4x^2 - 23x + 72 = 0$
 $-(4x - 9)(x + 8) = 0$
 $x = 2\frac{1}{4}, -8$
- $-3x^2 - 5x - 2 = 0$
 $-(x + 1)(3x + 2) = 0$
 $x = -1, -\frac{2}{3}$
- $-3x^2 - 22x + 45 = 0$
 $-(x + 9)(3x - 5) = 0$
 $x = -9, 1\frac{2}{3}$
- $4x^2 - 35x - 9 = 0$
 $(4x + 1)(x - 9) = 0$
 $x = -\frac{1}{4}, 9$
- $-2x^2 - x + 3 = 0$
 $-(2x + 3)(x - 1) = 0$
 $x = -1\frac{1}{2}, 1$
- $4x^2 + 4x - 3 = 0$
 $(2x - 1)(2x + 3) = 0$
 $x = \frac{1}{2}, -1\frac{1}{2}$
- $2x^2 - 11x + 9 = 0$
 $(x - 1)(2x - 9) = 0$
 $x = 1, 4\frac{1}{2}$
- $4x^2 + 35x - 9 = 0$
 $(x + 9)(4x - 1) = 0$
 $x = -9, \frac{1}{4}$
- $x^2 + 8x - 9 = 0$
 $(x - 1)(x + 9) = 0$
 $x = 1, -9$
- $-x^2 - 7x - 12 = 0$
 $-(x + 4)(x + 3) = 0$
 $x = -4, -3$
- $2x^2 - 13x - 45 = 0$
 $(x - 9)(2x + 5) = 0$
 $x = 9, -2\frac{1}{2}$
- $-2x^2 + 5x - 2 = 0$
 $-(x - 2)(2x - 1) = 0$
 $x = 2, \frac{1}{2}$
- $-3x^2 + 25x + 18 = 0$
 $-(3x + 2)(x - 9) = 0$
 $x = -\frac{2}{3}, 9$
- $x^2 - 3x - 10 = 0$
 $(x + 2)(x - 5) = 0$
 $x = -2, 5$

Solving Quadratic Equations (C)

Name: _____

Date: _____

Solve each equation for x.

1. $3x^2 + 26x + 16 = 0$

11. $4x^2 - 16x + 7 = 0$

2. $-3x^2 - 23x + 8 = 0$

12. $-3x^2 + 19x + 40 = 0$

3. $4x^2 + 28x + 49 = 0$

13. $4x^2 - 24x + 35 = 0$

4. $x^2 - 6x - 7 = 0$

14. $-4x^2 - 12x + 27 = 0$

5. $-x^2 - 2x + 8 = 0$

15. $4x^2 - 35x - 9 = 0$

6. $2x^2 + 13x + 6 = 0$

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

7. $-3x^2 - 20x + 63 = 0$

17. $-4x^2 + 8x + 21 = 0$

8. $-2x^2 + x + 15 = 0$

18. $3x^2 + 14x - 24 = 0$

9. $3x^2 + x - 14 = 0$

19. $-4x^2 + 13x - 3 = 0$

10. $-3x^2 + 11x - 6 = 0$

20. $-3x^2 - 19x - 6 = 0$

Solving Quadratic Equations (C) Answers

Name: _____

Date: _____

Solve each equation for x.

- $3x^2 + 26x + 16 = 0$
 $(3x + 2)(x + 8) = 0$
 $x = -\frac{2}{3}, -8$
- $-3x^2 - 23x + 8 = 0$
 $-(x + 8)(3x - 1) = 0$
 $x = -8, \frac{1}{3}$
- $4x^2 + 28x + 49 = 0$
 $(2x + 7)(2x + 7) = (2x + 7)^2 = 0$
 $x = -3\frac{1}{2}$
- $x^2 - 6x - 7 = 0$
 $(x + 1)(x - 7) = 0$
 $x = -1, 7$
- $-x^2 - 2x + 8 = 0$
 $-(x - 2)(x + 4) = 0$
 $x = 2, -4$
- $2x^2 + 13x + 6 = 0$
 $(2x + 1)(x + 6) = 0$
 $x = -\frac{1}{2}, -6$
- $-3x^2 - 20x + 63 = 0$
 $-(3x - 7)(x + 9) = 0$
 $x = 2\frac{1}{3}, -9$
- $-2x^2 + x + 15 = 0$
 $-(x - 3)(2x + 5) = 0$
 $x = 3, -2\frac{1}{2}$
- $3x^2 + x - 14 = 0$
 $(3x + 7)(x - 2) = 0$
 $x = -2\frac{1}{3}, 2$
- $-3x^2 + 11x - 6 = 0$
 $-(x - 3)(3x - 2) = 0$
 $x = 3, \frac{2}{3}$
- $4x^2 - 16x + 7 = 0$
 $(2x - 1)(2x - 7) = 0$
 $x = \frac{1}{2}, 3\frac{1}{2}$
- $-3x^2 + 19x + 40 = 0$
 $-(x - 8)(3x + 5) = 0$
 $x = 8, -1\frac{2}{3}$
- $4x^2 - 24x + 35 = 0$
 $(2x - 7)(2x - 5) = 0$
 $x = 3\frac{1}{2}, 2\frac{1}{2}$
- $-4x^2 - 12x + 27 = 0$
 $-(2x - 3)(2x + 9) = 0$
 $x = 1\frac{1}{2}, -4\frac{1}{2}$
- $4x^2 - 35x - 9 = 0$
 $(4x + 1)(x - 9) = 0$
 $x = -\frac{1}{4}, 9$
- $2x^2 - 3x - 5 = 0$
 $(x + 1)(2x - 5) = 0$
 $x = -1, 2\frac{1}{2}$
- $-4x^2 + 8x + 21 = 0$
 $-(2x - 7)(2x + 3) = 0$
 $x = 3\frac{1}{2}, -1\frac{1}{2}$
- $3x^2 + 14x - 24 = 0$
 $(3x - 4)(x + 6) = 0$
 $x = 1\frac{1}{3}, -6$
- $-4x^2 + 13x - 3 = 0$
 $-(x - 3)(4x - 1) = 0$
 $x = 3, \frac{1}{4}$
- $-3x^2 - 19x - 6 = 0$
 $-(3x + 1)(x + 6) = 0$
 $x = -\frac{1}{3}, -6$

Solving Quadratic Equations (D)

Name: _____

Date: _____

Solve each equation for x.

1. $-4x^2 - 33x - 54 = 0$

11. $-4x^2 - 16x + 9 = 0$

2. $-4x^2 - 15x - 14 = 0$

12. $x^2 + 11x + 24 = 0$

3. $-4x^2 + 28x - 45 = 0$

13. $x^2 - 17x + 72 = 0$

4. $4x^2 + 19x + 21 = 0$

14. $4x^2 + 8x - 5 = 0$

5. $-4x^2 + 8x + 5 = 0$

15. $-2x^2 - 27x - 81 = 0$

6. $4x^2 - 4x - 3 = 0$

16. $-3x^2 - 28x - 9 = 0$

7. $-3x^2 + 19x + 72 = 0$

17. $-4x^2 - 8x + 21 = 0$

8. $-x^2 + 2x + 24 = 0$

18. $-x^2 - 9x - 20 = 0$

9. $2x^2 - 7x - 30 = 0$

19. $-2x^2 - x + 6 = 0$

10. $-4x^2 - 20x - 9 = 0$

20. $-3x^2 - 11x - 10 = 0$

Solving Quadratic Equations (D) Answers

Name: _____

Date: _____

Solve each equation for x.

1. $-4x^2 - 33x - 54 = 0$
 $-(4x + 9)(x + 6) = 0$
 $x = -2\frac{1}{4}, -6$

2. $-4x^2 - 15x - 14 = 0$
 $-(4x + 7)(x + 2) = 0$
 $x = -1\frac{3}{4}, -2$

3. $-4x^2 + 28x - 45 = 0$
 $-(2x - 9)(2x - 5) = 0$
 $x = 4\frac{1}{2}, 2\frac{1}{2}$

4. $4x^2 + 19x + 21 = 0$
 $(4x + 7)(x + 3) = 0$
 $x = -1\frac{3}{4}, -3$

5. $-4x^2 + 8x + 5 = 0$
 $-(2x - 5)(2x + 1) = 0$
 $x = 2\frac{1}{2}, -\frac{1}{2}$

6. $4x^2 - 4x - 3 = 0$
 $(2x + 1)(2x - 3) = 0$
 $x = -\frac{1}{2}, 1\frac{1}{2}$

7. $-3x^2 + 19x + 72 = 0$
 $-(x - 9)(3x + 8) = 0$
 $x = 9, -2\frac{2}{3}$

8. $-x^2 + 2x + 24 = 0$
 $-(x + 4)(x - 6) = 0$
 $x = -4, 6$

9. $2x^2 - 7x - 30 = 0$
 $(x - 6)(2x + 5) = 0$
 $x = 6, -2\frac{1}{2}$

10. $-4x^2 - 20x - 9 = 0$
 $-(2x + 9)(2x + 1) = 0$
 $x = -4\frac{1}{2}, -\frac{1}{2}$

11. $-4x^2 - 16x + 9 = 0$
 $-(2x - 1)(2x + 9) = 0$
 $x = \frac{1}{2}, -4\frac{1}{2}$

12. $x^2 + 11x + 24 = 0$
 $(x + 8)(x + 3) = 0$
 $x = -8, -3$

13. $x^2 - 17x + 72 = 0$
 $(x - 9)(x - 8) = 0$
 $x = 9, 8$

14. $4x^2 + 8x - 5 = 0$
 $(2x + 5)(2x - 1) = 0$
 $x = -2\frac{1}{2}, \frac{1}{2}$

15. $-2x^2 - 27x - 81 = 0$
 $-(x + 9)(2x + 9) = 0$
 $x = -9, -4\frac{1}{2}$

16. $-3x^2 - 28x - 9 = 0$
 $-(3x + 1)(x + 9) = 0$
 $x = -\frac{1}{3}, -9$

17. $-4x^2 - 8x + 21 = 0$
 $-(2x + 7)(2x - 3) = 0$
 $x = -3\frac{1}{2}, 1\frac{1}{2}$

18. $-x^2 - 9x - 20 = 0$
 $-(x + 5)(x + 4) = 0$
 $x = -5, -4$

19. $-2x^2 - x + 6 = 0$
 $-(x + 2)(2x - 3) = 0$
 $x = -2, 1\frac{1}{2}$

20. $-3x^2 - 11x - 10 = 0$
 $-(3x + 5)(x + 2) = 0$
 $x = -1\frac{2}{3}, -2$

Solving Quadratic Equations (E)

Name: _____

Date: _____

Solve each equation for x.

1. $-x^2 - 2x + 24 = 0$

11. $2x^2 - 3x + 1 = 0$

2. $-4x^2 - 7x - 3 = 0$

12. $3x^2 + 4x - 4 = 0$

3. $4x^2 + 41x + 45 = 0$

13. $-2x^2 + 23x - 56 = 0$

4. $-3x^2 + 4x + 7 = 0$

14. $4x^2 + 31x - 45 = 0$

5. $-3x^2 - 4x + 7 = 0$

15. $-3x^2 - 17x + 28 = 0$

6. $4x^2 - 4x - 35 = 0$

16. $-2x^2 + 9x + 5 = 0$

7. $2x^2 + 11x - 21 = 0$

17. $-4x^2 + 35x - 49 = 0$

8. $-x^2 + 11x - 24 = 0$

18. $2x^2 - 3x - 20 = 0$

9. $-4x^2 - 29x - 30 = 0$

19. $-3x^2 + 5x + 2 = 0$

10. $3x^2 - 5x - 12 = 0$

20. $-4x^2 + 19x - 12 = 0$

Solving Quadratic Equations (E) Answers

Name: _____

Date: _____

Solve each equation for x.

1. $-x^2 - 2x + 24 = 0$
 $-(x - 4)(x + 6) = 0$
 $x = 4, -6$

2. $-4x^2 - 7x - 3 = 0$
 $-(4x + 3)(x + 1) = 0$
 $x = -\frac{3}{4}, -1$

3. $4x^2 + 41x + 45 = 0$
 $(x + 9)(4x + 5) = 0$
 $x = -9, -1\frac{1}{4}$

4. $-3x^2 + 4x + 7 = 0$
 $-(3x - 7)(x + 1) = 0$
 $x = 2\frac{1}{3}, -1$

5. $-3x^2 - 4x + 7 = 0$
 $-(x - 1)(3x + 7) = 0$
 $x = 1, -2\frac{1}{3}$

6. $4x^2 - 4x - 35 = 0$
 $(2x - 7)(2x + 5) = 0$
 $x = 3\frac{1}{2}, -2\frac{1}{2}$

7. $2x^2 + 11x - 21 = 0$
 $(x + 7)(2x - 3) = 0$
 $x = -7, 1\frac{1}{2}$

8. $-x^2 + 11x - 24 = 0$
 $-(x - 8)(x - 3) = 0$
 $x = 8, 3$

9. $-4x^2 - 29x - 30 = 0$
 $-(x + 6)(4x + 5) = 0$
 $x = -6, -1\frac{1}{4}$

10. $3x^2 - 5x - 12 = 0$
 $(x - 3)(3x + 4) = 0$
 $x = 3, -1\frac{1}{3}$

11. $2x^2 - 3x + 1 = 0$
 $(x - 1)(2x - 1) = 0$
 $x = 1, \frac{1}{2}$

12. $3x^2 + 4x - 4 = 0$
 $(3x - 2)(x + 2) = 0$
 $x = \frac{2}{3}, -2$

13. $-2x^2 + 23x - 56 = 0$
 $-(2x - 7)(x - 8) = 0$
 $x = 3\frac{1}{2}, 8$

14. $4x^2 + 31x - 45 = 0$
 $(x + 9)(4x - 5) = 0$
 $x = -9, 1\frac{1}{4}$

15. $-3x^2 - 17x + 28 = 0$
 $-(x + 7)(3x - 4) = 0$
 $x = -7, 1\frac{1}{3}$

16. $-2x^2 + 9x + 5 = 0$
 $-(2x + 1)(x - 5) = 0$
 $x = -\frac{1}{2}, 5$

17. $-4x^2 + 35x - 49 = 0$
 $-(x - 7)(4x - 7) = 0$
 $x = 7, 1\frac{3}{4}$

18. $2x^2 - 3x - 20 = 0$
 $(x - 4)(2x + 5) = 0$
 $x = 4, -2\frac{1}{2}$

19. $-3x^2 + 5x + 2 = 0$
 $-(x - 2)(3x + 1) = 0$
 $x = 2, -\frac{1}{3}$

20. $-4x^2 + 19x - 12 = 0$
 $-(4x - 3)(x - 4) = 0$
 $x = \frac{3}{4}, 4$

Solving Quadratic Equations (F)

Name: _____

Date: _____

Solve each equation for x.

1. $-3x^2 - 20x + 32 = 0$

11. $-2x^2 + 11x - 12 = 0$

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

12. $4x^2 + 23x - 6 = 0$

3. $-4x^2 + 19x + 5 = 0$

13. $x^2 + 6x - 27 = 0$

4. $x^2 + 10x + 16 = 0$

14. $2x^2 + 15x + 25 = 0$

5. $x^2 + x - 12 = 0$

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

6. $-4x^2 + 43x - 63 = 0$

16. $-4x^2 + 49 = 0$

7. $-4x^2 + 37x - 63 = 0$

17. $4x^2 - 11x - 45 = 0$

8. $2x^2 - 5x - 18 = 0$

18. $-3x^2 + 32x - 45 = 0$

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

19. $-4x^2 - 39x - 27 = 0$

10. $-2x^2 - 23x - 56 = 0$

20. $-4x^2 - 24x - 27 = 0$

Solving Quadratic Equations (F) Answers

Name: _____

Date: _____

Solve each equation for x.

- $-3x^2 - 20x + 32 = 0$
 $-(3x - 4)(x + 8) = 0$
 $x = 1\frac{1}{3}, -8$
- $3x^2 - x - 10 = 0$
 $(3x + 5)(x - 2) = 0$
 $x = -1\frac{2}{3}, 2$
- $-4x^2 + 19x + 5 = 0$
 $-(4x + 1)(x - 5) = 0$
 $x = -\frac{1}{4}, 5$
- $x^2 + 10x + 16 = 0$
 $(x + 2)(x + 8) = 0$
 $x = -2, -8$
- $x^2 + x - 12 = 0$
 $(x + 4)(x - 3) = 0$
 $x = -4, 3$
- $-4x^2 + 43x - 63 = 0$
 $-(4x - 7)(x - 9) = 0$
 $x = 1\frac{3}{4}, 9$
- $-4x^2 + 37x - 63 = 0$
 $-(4x - 9)(x - 7) = 0$
 $x = 2\frac{1}{4}, 7$
- $2x^2 - 5x - 18 = 0$
 $(x + 2)(2x - 9) = 0$
 $x = -2, 4\frac{1}{2}$
- $-x^2 - 4x - 3 = 0$
 $-(x + 1)(x + 3) = 0$
 $x = -1, -3$
- $-2x^2 - 23x - 56 = 0$
 $-(2x + 7)(x + 8) = 0$
 $x = -3\frac{1}{2}, -8$
- $-2x^2 + 11x - 12 = 0$
 $-(2x - 3)(x - 4) = 0$
 $x = 1\frac{1}{2}, 4$
- $4x^2 + 23x - 6 = 0$
 $(x + 6)(4x - 1) = 0$
 $x = -6, \frac{1}{4}$
- $x^2 + 6x - 27 = 0$
 $(x - 3)(x + 9) = 0$
 $x = 3, -9$
- $2x^2 + 15x + 25 = 0$
 $(x + 5)(2x + 5) = 0$
 $x = -5, -2\frac{1}{2}$
- $-x^2 + x + 6 = 0$
 $-(x - 3)(x + 2) = 0$
 $x = 3, -2$
- $-4x^2 + 49 = 0$
 $-(2x + 7)(2x - 7) = 0$
 $x = -3\frac{1}{2}, 3\frac{1}{2}$
- $4x^2 - 11x - 45 = 0$
 $(x - 5)(4x + 9) = 0$
 $x = 5, -2\frac{1}{4}$
- $-3x^2 + 32x - 45 = 0$
 $-(x - 9)(3x - 5) = 0$
 $x = 9, 1\frac{2}{3}$
- $-4x^2 - 39x - 27 = 0$
 $-(x + 9)(4x + 3) = 0$
 $x = -9, -\frac{3}{4}$
- $-4x^2 - 24x - 27 = 0$
 $-(2x + 9)(2x + 3) = 0$
 $x = -4\frac{1}{2}, -1\frac{1}{2}$

Solving Quadratic Equations (G)

Name: _____

Date: _____

Solve each equation for x.

1. $3x^2 - 11x + 8 = 0$

11. $-x^2 - 16x - 63 = 0$

2. $4x^2 + 45x + 81 = 0$

12. $-4x^2 - 24x - 35 = 0$

3. $3x^2 - 8x - 3 = 0$

13. $3x^2 - x - 24 = 0$

4. $2x^2 + 17x + 35 = 0$

14. $-4x^2 - 25x - 25 = 0$

5. $4x^2 + 13x - 35 = 0$

15. $x^2 + x - 56 = 0$

6. $2x^2 - 17x + 35 = 0$

16. $3x^2 + 14x - 24 = 0$

7. $-4x^2 + 37x - 63 = 0$

17. $4x^2 - 33x + 54 = 0$

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

18. $-4x^2 - 31x + 8 = 0$

9. $-3x^2 - 16x + 35 = 0$

19. $-3x^2 + 26x - 48 = 0$

10. $4x^2 - 21x - 18 = 0$

20. $-3x^2 + 23x - 14 = 0$

Solving Quadratic Equations (G) Answers

Name: _____

Date: _____

Solve each equation for x.

- $3x^2 - 11x + 8 = 0$
 $(x - 1)(3x - 8) = 0$
 $x = 1, 2\frac{2}{3}$
- $4x^2 + 45x + 81 = 0$
 $(4x + 9)(x + 9) = 0$
 $x = -2\frac{1}{4}, -9$
- $3x^2 - 8x - 3 = 0$
 $(x - 3)(3x + 1) = 0$
 $x = 3, -\frac{1}{3}$
- $2x^2 + 17x + 35 = 0$
 $(x + 5)(2x + 7) = 0$
 $x = -5, -3\frac{1}{2}$
- $4x^2 + 13x - 35 = 0$
 $(4x - 7)(x + 5) = 0$
 $x = 1\frac{3}{4}, -5$
- $2x^2 - 17x + 35 = 0$
 $(x - 5)(2x - 7) = 0$
 $x = 5, 3\frac{1}{2}$
- $-4x^2 + 37x - 63 = 0$
 $-(4x - 9)(x - 7) = 0$
 $x = 2\frac{1}{4}, 7$
- $-x^2 + 5x + 6 = 0$
 $-(x + 1)(x - 6) = 0$
 $x = -1, 6$
- $-3x^2 - 16x + 35 = 0$
 $-(3x - 5)(x + 7) = 0$
 $x = 1\frac{2}{3}, -7$
- $4x^2 - 21x - 18 = 0$
 $(x - 6)(4x + 3) = 0$
 $x = 6, -\frac{3}{4}$
- $-x^2 - 16x - 63 = 0$
 $-(x + 7)(x + 9) = 0$
 $x = -7, -9$
- $-4x^2 - 24x - 35 = 0$
 $-(2x + 5)(2x + 7) = 0$
 $x = -2\frac{1}{2}, -3\frac{1}{2}$
- $3x^2 - x - 24 = 0$
 $(3x + 8)(x - 3) = 0$
 $x = -2\frac{2}{3}, 3$
- $-4x^2 - 25x - 25 = 0$
 $-(x + 5)(4x + 5) = 0$
 $x = -5, -1\frac{1}{4}$
- $x^2 + x - 56 = 0$
 $(x + 8)(x - 7) = 0$
 $x = -8, 7$
- $3x^2 + 14x - 24 = 0$
 $(3x - 4)(x + 6) = 0$
 $x = 1\frac{1}{3}, -6$
- $4x^2 - 33x + 54 = 0$
 $(x - 6)(4x - 9) = 0$
 $x = 6, 2\frac{1}{4}$
- $-4x^2 - 31x + 8 = 0$
 $-(4x - 1)(x + 8) = 0$
 $x = \frac{1}{4}, -8$
- $-3x^2 + 26x - 48 = 0$
 $-(x - 6)(3x - 8) = 0$
 $x = 6, 2\frac{2}{3}$
- $-3x^2 + 23x - 14 = 0$
 $-(3x - 2)(x - 7) = 0$
 $x = \frac{2}{3}, 7$

Solving Quadratic Equations (H)

Name: _____

Date: _____

Solve each equation for x.

1. $-2x^2 - 9x - 7 = 0$

11. $-3x^2 - 23x + 36 = 0$

2. $2x^2 + 5x - 12 = 0$

12. $2x^2 - 17x + 36 = 0$

3. $-2x^2 + 3x + 35 = 0$

13. $-4x^2 - 8x - 3 = 0$

4. $3x^2 + 19x - 40 = 0$

14. $3x^2 - 7x + 4 = 0$

5. $-4x^2 - 24x - 35 = 0$

15. $-4x^2 - 13x - 9 = 0$

6. $-2x^2 + 17x - 8 = 0$

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

7. $4x^2 + 24x + 35 = 0$

17. $2x^2 + 9x - 81 = 0$

8. $3x^2 + 2x - 1 = 0$

18. $x^2 - 16 = 0$

9. $-x^2 - 12x - 32 = 0$

19. $-4x^2 + x + 3 = 0$

10. $-3x^2 + 14x + 49 = 0$

20. $-2x^2 - 13x + 24 = 0$

Solving Quadratic Equations (H) Answers

Name: _____

Date: _____

Solve each equation for x.

- $-2x^2 - 9x - 7 = 0$
 $-(2x + 7)(x + 1) = 0$
 $x = -3\frac{1}{2}, -1$
- $2x^2 + 5x - 12 = 0$
 $(x + 4)(2x - 3) = 0$
 $x = -4, 1\frac{1}{2}$
- $-2x^2 + 3x + 35 = 0$
 $-(2x + 7)(x - 5) = 0$
 $x = -3\frac{1}{2}, 5$
- $3x^2 + 19x - 40 = 0$
 $(x + 8)(3x - 5) = 0$
 $x = -8, 1\frac{2}{3}$
- $-4x^2 - 24x - 35 = 0$
 $-(2x + 7)(2x + 5) = 0$
 $x = -3\frac{1}{2}, -2\frac{1}{2}$
- $-2x^2 + 17x - 8 = 0$
 $-(x - 8)(2x - 1) = 0$
 $x = 8, \frac{1}{2}$
- $4x^2 + 24x + 35 = 0$
 $(2x + 5)(2x + 7) = 0$
 $x = -2\frac{1}{2}, -3\frac{1}{2}$
- $3x^2 + 2x - 1 = 0$
 $(x + 1)(3x - 1) = 0$
 $x = -1, \frac{1}{3}$
- $-x^2 - 12x - 32 = 0$
 $-(x + 8)(x + 4) = 0$
 $x = -8, -4$
- $-3x^2 + 14x + 49 = 0$
 $-(3x + 7)(x - 7) = 0$
 $x = -2\frac{1}{3}, 7$
- $-3x^2 - 23x + 36 = 0$
 $-(x + 9)(3x - 4) = 0$
 $x = -9, 1\frac{1}{3}$
- $2x^2 - 17x + 36 = 0$
 $(x - 4)(2x - 9) = 0$
 $x = 4, 4\frac{1}{2}$
- $-4x^2 - 8x - 3 = 0$
 $-(2x + 3)(2x + 1) = 0$
 $x = -1\frac{1}{2}, -\frac{1}{2}$
- $3x^2 - 7x + 4 = 0$
 $(x - 1)(3x - 4) = 0$
 $x = 1, 1\frac{1}{3}$
- $-4x^2 - 13x - 9 = 0$
 $-(x + 1)(4x + 9) = 0$
 $x = -1, -2\frac{1}{4}$
- $-x^2 + 7x - 6 = 0$
 $-(x - 6)(x - 1) = 0$
 $x = 6, 1$
- $2x^2 + 9x - 81 = 0$
 $(2x - 9)(x + 9) = 0$
 $x = 4\frac{1}{2}, -9$
- $x^2 - 16 = 0$
 $(x + 4)(x - 4) = 0$
 $x = -4, 4$
- $-4x^2 + x + 3 = 0$
 $-(x - 1)(4x + 3) = 0$
 $x = 1, -\frac{3}{4}$
- $-2x^2 - 13x + 24 = 0$
 $-(2x - 3)(x + 8) = 0$
 $x = 1\frac{1}{2}, -8$

Solving Quadratic Equations (I)

Name: _____

Date: _____

Solve each equation for x.

1. $-4x^2 - 5x + 21 = 0$

11. $3x^2 + x - 14 = 0$

2. $3x^2 - 25x + 8 = 0$

12. $x^2 - x - 12 = 0$

3. $x^2 - x - 56 = 0$

13. $-4x^2 - 16x - 7 = 0$

4. $4x^2 - 3x - 10 = 0$

14. $-x^2 + 11x - 18 = 0$

5. $-2x^2 - 11x + 63 = 0$

15. $2x^2 - 9x + 4 = 0$

6. $2x^2 + 9x - 5 = 0$

16. $4x^2 - 19x + 12 = 0$

7. $-3x^2 + 10x + 8 = 0$

17. $-3x^2 + x + 24 = 0$

8. $-3x^2 + 7x - 4 = 0$

18. $-4x^2 + 8x - 3 = 0$

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

19. $4x^2 + 20x + 21 = 0$

10. $-3x^2 + 19x - 6 = 0$

20. $-2x^2 + 3x + 27 = 0$

Solving Quadratic Equations (I) Answers

Name: _____

Date: _____

Solve each equation for x.

1. $-4x^2 - 5x + 21 = 0$
 $-(4x - 7)(x + 3) = 0$
 $x = 1\frac{3}{4}, -3$

2. $3x^2 - 25x + 8 = 0$
 $(x - 8)(3x - 1) = 0$
 $x = 8, \frac{1}{3}$

3. $x^2 - x - 56 = 0$
 $(x + 7)(x - 8) = 0$
 $x = -7, 8$

4. $4x^2 - 3x - 10 = 0$
 $(x - 2)(4x + 5) = 0$
 $x = 2, -1\frac{1}{4}$

5. $-2x^2 - 11x + 63 = 0$
 $-(x + 9)(2x - 7) = 0$
 $x = -9, 3\frac{1}{2}$

6. $2x^2 + 9x - 5 = 0$
 $(2x - 1)(x + 5) = 0$
 $x = \frac{1}{2}, -5$

7. $-3x^2 + 10x + 8 = 0$
 $-(3x + 2)(x - 4) = 0$
 $x = -\frac{2}{3}, 4$

8. $-3x^2 + 7x - 4 = 0$
 $-(x - 1)(3x - 4) = 0$
 $x = 1, 1\frac{1}{3}$

9. $x^2 - 14x + 49 = 0$
 $(x - 7)(x - 7) = (x - 7)^2 = 0$
 $x = 7$

10. $-3x^2 + 19x - 6 = 0$
 $-(x - 6)(3x - 1) = 0$
 $x = 6, \frac{1}{3}$

11. $3x^2 + x - 14 = 0$
 $(3x + 7)(x - 2) = 0$
 $x = -2\frac{1}{3}, 2$

12. $x^2 - x - 12 = 0$
 $(x + 3)(x - 4) = 0$
 $x = -3, 4$

13. $-4x^2 - 16x - 7 = 0$
 $-(2x + 7)(2x + 1) = 0$
 $x = -3\frac{1}{2}, -\frac{1}{2}$

14. $-x^2 + 11x - 18 = 0$
 $-(x - 2)(x - 9) = 0$
 $x = 2, 9$

15. $2x^2 - 9x + 4 = 0$
 $(2x - 1)(x - 4) = 0$
 $x = \frac{1}{2}, 4$

16. $4x^2 - 19x + 12 = 0$
 $(4x - 3)(x - 4) = 0$
 $x = \frac{3}{4}, 4$

17. $-3x^2 + x + 24 = 0$
 $-(x - 3)(3x + 8) = 0$
 $x = 3, -2\frac{2}{3}$

18. $-4x^2 + 8x - 3 = 0$
 $-(2x - 1)(2x - 3) = 0$
 $x = \frac{1}{2}, 1\frac{1}{2}$

19. $4x^2 + 20x + 21 = 0$
 $(2x + 7)(2x + 3) = 0$
 $x = -3\frac{1}{2}, -1\frac{1}{2}$

20. $-2x^2 + 3x + 27 = 0$
 $-(x + 3)(2x - 9) = 0$
 $x = -3, 4\frac{1}{2}$

Solving Quadratic Equations (J)

Name: _____

Date: _____

Solve each equation for x.

1. $-2x^2 + 23x - 63 = 0$

11. $4x^2 - 12x + 9 = 0$

2. $-2x^2 + 13x - 21 = 0$

12. $-3x^2 - 20x + 7 = 0$

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

13. $2x^2 + 3x - 27 = 0$

4. $-4x^2 - 3x + 10 = 0$

14. $-2x^2 - 23x - 45 = 0$

5. $-3x^2 - 11x - 10 = 0$

15. $-3x^2 - 8x - 4 = 0$

6. $-4x^2 + 37x - 40 = 0$

16. $4x^2 - 24x + 35 = 0$

7. $2x^2 - 13x - 24 = 0$

17. $-x^2 - 14x - 48 = 0$

8. $x^2 - 7x - 18 = 0$

18. $4x^2 + 23x + 15 = 0$

9. $-2x^2 - 3x + 35 = 0$

19. $3x^2 - 31x + 56 = 0$

10. $-3x^2 + 19x + 14 = 0$

20. $3x^2 + 34x + 63 = 0$

Solving Quadratic Equations (J) Answers

Name: _____

Date: _____

Solve each equation for x.

1. $-2x^2 + 23x - 63 = 0$
 $-(x - 7)(2x - 9) = 0$
 $x = 7, 4\frac{1}{2}$

2. $-2x^2 + 13x - 21 = 0$
 $-(x - 3)(2x - 7) = 0$
 $x = 3, 3\frac{1}{2}$

3. $2x^2 + 5x + 2 = 0$
 $(x + 2)(2x + 1) = 0$
 $x = -2, -\frac{1}{2}$

4. $-4x^2 - 3x + 10 = 0$
 $-(x + 2)(4x - 5) = 0$
 $x = -2, 1\frac{1}{4}$

5. $-3x^2 - 11x - 10 = 0$
 $-(x + 2)(3x + 5) = 0$
 $x = -2, -1\frac{2}{3}$

6. $-4x^2 + 37x - 40 = 0$
 $-(x - 8)(4x - 5) = 0$
 $x = 8, 1\frac{1}{4}$

7. $2x^2 - 13x - 24 = 0$
 $(x - 8)(2x + 3) = 0$
 $x = 8, -1\frac{1}{2}$

8. $x^2 - 7x - 18 = 0$
 $(x - 9)(x + 2) = 0$
 $x = 9, -2$

9. $-2x^2 - 3x + 35 = 0$
 $-(2x - 7)(x + 5) = 0$
 $x = 3\frac{1}{2}, -5$

10. $-3x^2 + 19x + 14 = 0$
 $-(x - 7)(3x + 2) = 0$
 $x = 7, -\frac{2}{3}$

11. $4x^2 - 12x + 9 = 0$
 $(2x - 3)(2x - 3) = (2x - 3)^2 = 0$
 $x = 1\frac{1}{2}$

12. $-3x^2 - 20x + 7 = 0$
 $-(x + 7)(3x - 1) = 0$
 $x = -7, \frac{1}{3}$

13. $2x^2 + 3x - 27 = 0$
 $(x - 3)(2x + 9) = 0$
 $x = 3, -4\frac{1}{2}$

14. $-2x^2 - 23x - 45 = 0$
 $-(2x + 5)(x + 9) = 0$
 $x = -2\frac{1}{2}, -9$

15. $-3x^2 - 8x - 4 = 0$
 $-(x + 2)(3x + 2) = 0$
 $x = -2, -\frac{2}{3}$

16. $4x^2 - 24x + 35 = 0$
 $(2x - 7)(2x - 5) = 0$
 $x = 3\frac{1}{2}, 2\frac{1}{2}$

17. $-x^2 - 14x - 48 = 0$
 $-(x + 8)(x + 6) = 0$
 $x = -8, -6$

18. $4x^2 + 23x + 15 = 0$
 $(4x + 3)(x + 5) = 0$
 $x = -\frac{3}{4}, -5$

19. $3x^2 - 31x + 56 = 0$
 $(x - 8)(3x - 7) = 0$
 $x = 8, 2\frac{1}{3}$

20. $3x^2 + 34x + 63 = 0$
 $(x + 9)(3x + 7) = 0$
 $x = -9, -2\frac{1}{3}$