Solving Quadratic Equations (A)

Name: _____ Date: _____

Solve each equation for x.

1. $3x^2 + 13x + 12 = 0$
2. $8x^2 - 2x - 45 = 0$
3. $2x^2 + 3x + 1 = 0$
4. $5x^2 - 33x + 18 = 0$
5. $8x^2 - 18x + 9 = 0$
6. $5x^2 + 42x + 16 = 0$
7. $2x^2 - 17x + 30 = 0$
8. $7x^2 + 50x + 7 = 0$
9. $2x^2 - x - 1 = 0$
10. $4x^2 - 27x - 40 = 0$
11. $9x^2 - 21x + 10 = 0$
12. $6x^2 + 31x - 30 = 0$
13. $3x^2 - 26x + 16 = 0$
14. $8x^2 - 47x - 6 = 0$
15. $6x^2 + 53x - 9 = 0$
16. $8x^2 + 14x - 9 = 0$
17. $4x^2 + 4x - 3 = 0$
18. $8x^2 - 30x + 25 = 0$
19. $9x^2 - 23x - 12 = 0$
20. $6x^2 - 49x - 45 = 0$

Solving Quadratic Equations (A) Answers

Name: _____ Date: _____

Solve each equation for x.

1. $3x^2 + 13x + 12 = 0$
   $(x+3)(3x+4) = 0$
   $x = -3, -1\frac{1}{3}$

2. $8x^2 - 2x - 45 = 0$
   $(4x+9)(2x-5) = 0$
   $x = -2\frac{1}{4}, 2\frac{1}{2}$

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

4. $5x^2 - 33x + 18 = 0$
   $(5x-3)(x-6) = 0$
   $x = \frac{3}{5}, 6$

5. $8x^2 - 18x + 9 = 0$
   $(4x-3)(2x-3) = 0$
   $x = \frac{3}{4}, 1\frac{1}{2}$

6. $5x^2 + 42x + 16 = 0$
   $(5x+2)(x+8) = 0$
   $x = -\frac{2}{5}, -8$

7. $2x^2 - 17x + 30 = 0$
   $(x-6)(2x-5) = 0$
   $x = 6, 2\frac{1}{2}$

8. $7x^2 + 50x + 7 = 0$
   $(7x+1)(x+7) = 0$
   $x = -\frac{1}{7}, -7$

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

10. $4x^2 - 27x - 40 = 0$
    $(4x+5)(x-8) = 0$
    $x = -1\frac{1}{4}, 8$

11. $9x^2 - 21x + 10 = 0$
    $(3x-5)(3x-2) = 0$
    $x = 1\frac{2}{3}, \frac{2}{3}$

12. $6x^2 + 31x - 30 = 0$
    $(x+6)(6x-5) = 0$
    $x = -6, \frac{5}{6}$

13. $3x^2 - 26x + 16 = 0$
    $(x-8)(3x-2) = 0$
    $x = 8, \frac{2}{3}$

14. $8x^2 - 47x - 6 = 0$
    $(x-6)(8x+1) = 0$
    $x = 6, -\frac{1}{8}$

15. $6x^2 + 53x - 9 = 0$
    $(x+9)(6x-1) = 0$
    $x = -9, \frac{1}{6}$

16. $8x^2 + 14x - 9 = 0$
    $(4x+9)(2x-1) = 0$
    $x = -2\frac{1}{4}, \frac{1}{2}$

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

18. $8x^2 - 30x + 25 = 0$
    $(2x-5)(4x-5) = 0$
    $x = 2\frac{1}{2}, 1\frac{1}{4}$

19. $9x^2 - 23x - 12 = 0$
    $(x-3)(9x+4) = 0$
    $x = 3, -\frac{4}{9}$

20. $6x^2 - 49x - 45 = 0$
    $(6x+5)(x-9) = 0$
    $x = -\frac{5}{6}, 9$

Solving Quadratic Equations (B)

Name: _____ Date: _____

Solve each equation for x.

1. $4x^2 + 8x + 3 = 0$
2. $8x^2 + 14x + 3 = 0$
3. $2x^2 - 5x - 3 = 0$
4. $3x^2 + 14x - 49 = 0$
5. $5x^2 - 24x + 16 = 0$
6. $6x^2 + 31x + 35 = 0$
7. $9x^2 - 88x + 63 = 0$
8. $8x^2 - 19x - 15 = 0$
9. $8x^2 - 2x - 3 = 0$
10. $8x^2 + 11x + 3 = 0$
11. $6x^2 + 5x + 1 = 0$
12. $9x^2 - 55x + 6 = 0$
13. $9x^2 + 85x + 36 = 0$
14. $2x^2 + 25x + 63 = 0$
15. $x^2 - 3x - 54 = 0$
16. $8x^2 - 46x + 63 = 0$
17. $8x^2 - 18x - 81 = 0$
18. $3x^2 - 19x + 6 = 0$
19. $9x^2 - 77x + 40 = 0$
20. $5x^2 + 9x + 4 = 0$

Solving Quadratic Equations (B) Answers

Name: _____ Date: _____

Solve each equation for x.

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

2. $8x^2 + 14x + 3 = 0$
   $(2x + 3)(4x + 1) = 0$
   $x = -1\frac{1}{2}, -\frac{1}{4}$

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

4. $3x^2 + 14x - 49 = 0$
   $(3x - 7)(x + 7) = 0$
   $x = 2\frac{1}{3}, -7$

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

6. $6x^2 + 31x + 35 = 0$
   $(3x + 5)(2x + 7) = 0$
   $x = -1\frac{2}{3}, -3\frac{1}{2}$

7. $9x^2 - 88x + 63 = 0$
   $(9x - 7)(x - 9) = 0$
   $x = \frac{7}{9}, 9$

8. $8x^2 - 19x - 15 = 0$
   $(x - 3)(8x + 5) = 0$
   $x = 3, -\frac{5}{8}$

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

10. $8x^2 + 11x + 3 = 0$
    $(x + 1)(8x + 3) = 0$
    $x = -1, -\frac{3}{8}$

11. $6x^2 + 5x + 1 = 0$
    $(2x + 1)(3x + 1) = 0$
    $x = -\frac{1}{2}, -\frac{1}{3}$

12. $9x^2 - 55x + 6 = 0$
    $(9x - 1)(x - 6) = 0$
    $x = \frac{1}{9}, 6$

13. $9x^2 + 85x + 36 = 0$
    $(9x + 4)(x + 9) = 0$
    $x = -\frac{4}{9}, -9$

14. $2x^2 + 25x + 63 = 0$
    $(2x + 7)(x + 9) = 0$
    $x = -3\frac{1}{2}, -9$

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

16. $8x^2 - 46x + 63 = 0$
    $(4x - 9)(2x - 7) = 0$
    $x = 2\frac{1}{4}, 3\frac{1}{2}$

17. $8x^2 - 18x - 81 = 0$
    $(4x + 9)(2x - 9) = 0$
    $x = -2\frac{1}{4}, 4\frac{1}{2}$

18. $3x^2 - 19x + 6 = 0$
    $(3x - 1)(x - 6) = 0$
    $x = \frac{1}{3}, 6$

19. $9x^2 - 77x + 40 = 0$
    $(x - 8)(9x - 5) = 0$
    $x = 8, \frac{5}{9}$

20. $5x^2 + 9x + 4 = 0$
    $(5x + 4)(x + 1) = 0$
    $x = -\frac{4}{5}, -1$

Solving Quadratic Equations (C)

Name: _____ Date: _____

Solve each equation for x.

1. $6x^2 + 35x + 49 = 0$
2. $9x^2 + 68x - 32 = 0$
3. $9x^2 + 68x + 35 = 0$
4. $8x^2 + 50x + 63 = 0$
5. $7x^2 - 58x - 45 = 0$
6. $9x^2 + 30x + 16 = 0$
7. $3x^2 + 16x + 21 = 0$
8. $7x^2 - 52x + 21 = 0$
9. $3x^2 - 14x - 5 = 0$
10. $6x^2 + 5x - 1 = 0$
11. $8x^2 - 42x + 27 = 0$
12. $5x^2 + 11x + 6 = 0$
13. $8x^2 + 30x - 27 = 0$
14. $6x^2 - 23x + 21 = 0$
15. $8x^2 + 59x + 21 = 0$
16. $9x^2 - 38x + 8 = 0$
17. $7x^2 + 34x - 5 = 0$
18. $2x^2 - 5x - 12 = 0$
19. $5x^2 + 24x - 36 = 0$
20. $2x^2 - 11x + 14 = 0$

Solving Quadratic Equations (C) Answers

Name: _____ Date: _____

Solve each equation for x.

1. $6x^2 + 35x + 49 = 0$
   $(2x + 7)(3x + 7) = 0$
   $x = -3\frac{1}{2}, -2\frac{1}{3}$

2. $9x^2 + 68x - 32 = 0$
   $(x + 8)(9x - 4) = 0$
   $x = -8, \frac{4}{9}$

3. $9x^2 + 68x + 35 = 0$
   $(x + 7)(9x + 5) = 0$
   $x = -7, -\frac{5}{9}$

4. $8x^2 + 50x + 63 = 0$
   $(4x + 7)(2x + 9) = 0$
   $x = -1\frac{3}{4}, -4\frac{1}{2}$

5. $7x^2 - 58x - 45 = 0$
   $(x - 9)(7x + 5) = 0$
   $x = 9, -\frac{5}{7}$

6. $9x^2 + 30x + 16 = 0$
   $(3x + 8)(3x + 2) = 0$
   $x = -2\frac{2}{3}, -\frac{2}{3}$

7. $3x^2 + 16x + 21 = 0$
   $(3x + 7)(x + 3) = 0$
   $x = -2\frac{1}{3}, -3$

8. $7x^2 - 52x + 21 = 0$
   $(7x - 3)(x - 7) = 0$
   $x = \frac{3}{7}, 7$

9. $3x^2 - 14x - 5 = 0$
   $(x - 5)(3x + 1) = 0$
   $x = 5, -\frac{1}{3}$

10. $6x^2 + 5x - 1 = 0$
    $(6x - 1)(x + 1) = 0$
    $x = \frac{1}{6}, -1$

11. $8x^2 - 42x + 27 = 0$
    $(4x - 3)(2x - 9) = 0$
    $x = \frac{3}{4}, 4\frac{1}{2}$

12. $5x^2 + 11x + 6 = 0$
    $(5x + 6)(x + 1) = 0$
    $x = -1\frac{1}{5}, -1$

13. $8x^2 + 30x - 27 = 0$
    $(2x + 9)(4x - 3) = 0$
    $x = -4\frac{1}{2}, \frac{3}{4}$

14. $6x^2 - 23x + 21 = 0$
    $(3x - 7)(2x - 3) = 0$
    $x = 2\frac{1}{3}, 1\frac{1}{2}$

15. $8x^2 + 59x + 21 = 0$
    $(x + 7)(8x + 3) = 0$
    $x = -7, -\frac{3}{8}$

16. $9x^2 - 38x + 8 = 0$
    $(9x - 2)(x - 4) = 0$
    $x = \frac{2}{9}, 4$

17. $7x^2 + 34x - 5 = 0$
    $(x + 5)(7x - 1) = 0$
    $x = -5, \frac{1}{7}$

18. $2x^2 - 5x - 12 = 0$
    $(x - 4)(2x + 3) = 0$
    $x = 4, -1\frac{1}{2}$

19. $5x^2 + 24x - 36 = 0$
    $(5x - 6)(x + 6) = 0$
    $x = 1\frac{1}{5}, -6$

20. $2x^2 - 11x + 14 = 0$
    $(x - 2)(2x - 7) = 0$
    $x = 2, 3\frac{1}{2}$

Solving Quadratic Equations (D)

Name: _____ Date: _____

Solve each equation for x.

1. $8x^2 + 10x - 7 = 0$
2. $5x^2 + 43x - 18 = 0$
3. $9x^2 - 27x + 8 = 0$
4. $9x^2 - 62x + 48 = 0$
5. $4x^2 + 12x - 27 = 0$
6. $5x^2 - 24x + 27 = 0$
7. $9x^2 - 3x - 2 = 0$
8. $6x^2 - 11x - 2 = 0$
9. $8x^2 - 79x + 63 = 0$
10. $6x^2 - 19x - 20 = 0$
11. $9x^2 - 47x - 42 = 0$
12. $7x^2 - 20x - 32 = 0$
13. $4x^2 - 21x + 20 = 0$
14. $9x^2 - 9x - 40 = 0$
15. $8x^2 + 2x - 1 = 0$
16. $4x^2 - 9 = 0$
17. $8x^2 - 26x + 15 = 0$
18. $7x^2 + 22x + 3 = 0$
19. $9x^2 + 61x + 42 = 0$
20. $2x^2 + 15x - 27 = 0$

Solving Quadratic Equations (D) Answers

Name: _____ Date: _____

Solve each equation for x.

1. $8x^2 + 10x - 7 = 0$
   $(2x - 1)(4x + 7) = 0$
   $x = \frac{1}{2}, -1\frac{3}{4}$

2. $5x^2 + 43x - 18 = 0$
   $(x + 9)(5x - 2) = 0$
   $x = -9, \frac{2}{5}$

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

4. $9x^2 - 62x + 48 = 0$
   $(9x - 8)(x - 6) = 0$
   $x = \frac{8}{9}, 6$

5. $4x^2 + 12x - 27 = 0$
   $(2x - 3)(2x + 9) = 0$
   $x = 1\frac{1}{2}, -4\frac{1}{2}$

6. $5x^2 - 24x + 27 = 0$
   $(x - 3)(5x - 9) = 0$
   $x = 3, 1\frac{4}{5}$

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

8. $6x^2 - 11x - 2 = 0$
   $(x - 2)(6x + 1) = 0$
   $x = 2, -\frac{1}{6}$

9. $8x^2 - 79x + 63 = 0$
   $(8x - 7)(x - 9) = 0$
   $x = \frac{7}{8}, 9$

10. $6x^2 - 19x - 20 = 0$
    $(6x + 5)(x - 4) = 0$
    $x = -\frac{5}{6}, 4$

11. $9x^2 - 47x - 42 = 0$
    $(9x + 7)(x - 6) = 0$
    $x = -\frac{7}{9}, 6$

12. $7x^2 - 20x - 32 = 0$
    $(x - 4)(7x + 8) = 0$
    $x = 4, -1\frac{1}{7}$

13. $4x^2 - 21x + 20 = 0$
    $(x - 4)(4x - 5) = 0$
    $x = 4, 1\frac{1}{4}$

14. $9x^2 - 9x - 40 = 0$
    $(3x - 8)(3x + 5) = 0$
    $x = 2\frac{2}{3}, -1\frac{2}{3}$

15. $8x^2 + 2x - 1 = 0$
    $(2x + 1)(4x - 1) = 0$
    $x = -\frac{1}{2}, \frac{1}{4}$

16. $4x^2 - 9 = 0$
    $(2x + 3)(2x - 3) = 0$
    $x = -1\frac{1}{2}, 1\frac{1}{2}$

17. $8x^2 - 26x + 15 = 0$
    $(2x - 5)(4x - 3) = 0$
    $x = 2\frac{1}{2}, \frac{3}{4}$

18. $7x^2 + 22x + 3 = 0$
    $(7x + 1)(x + 3) = 0$
    $x = -\frac{1}{7}, -3$

19. $9x^2 + 61x + 42 = 0$
    $(x + 6)(9x + 7) = 0$
    $x = -6, -\frac{7}{9}$

20. $2x^2 + 15x - 27 = 0$
    $(2x - 3)(x + 9) = 0$
    $x = 1\frac{1}{2}, -9$

Solving Quadratic Equations (E)

Name: _____ Date: _____

Solve each equation for x.

1. $4x^2 + 35x + 24 = 0$
2. $8x^2 - 26x - 7 = 0$
3. $2x^2 - 7x + 3 = 0$
4. $9x^2 + 6x + 1 = 0$
5. $6x^2 + 55x + 9 = 0$
6. $4x^2 - 28x + 45 = 0$
7. $6x^2 + 7x + 1 = 0$
8. $6x^2 - 5x - 4 = 0$
9. $8x^2 - 49x + 6 = 0$
10. $9x^2 - 65x + 14 = 0$
11. $4x^2 + 16x + 7 = 0$
12. $8x^2 - 69x + 40 = 0$
13. $3x^2 - 17x + 10 = 0$
14. $6x^2 - 19x - 20 = 0$
15. $3x^2 - 19x - 14 = 0$
16. $6x^2 - 13x - 63 = 0$
17. $6x^2 - 25x - 25 = 0$
18. $6x^2 + 31x + 35 = 0$
19. $8x^2 + 6x + 1 = 0$
20. $6x^2 + 13x - 5 = 0$

Solving Quadratic Equations (E) Answers

Name: _____ Date: _____

Solve each equation for x.

1. $4x^2 + 35x + 24 = 0$
   $(4x + 3)(x + 8) = 0$
   $x = -\frac{3}{4}, -8$

2. $8x^2 - 26x - 7 = 0$
   $(4x + 1)(2x - 7) = 0$
   $x = -\frac{1}{4}, 3\frac{1}{2}$

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

4. $9x^2 + 6x + 1 = 0$
   $(3x + 1)(3x + 1) = (3x + 1)^2 = 0$
   $x = -\frac{1}{3}$

5. $6x^2 + 55x + 9 = 0$
   $(6x + 1)(x + 9) = 0$
   $x = -\frac{1}{6}, -9$

6. $4x^2 - 28x + 45 = 0$
   $(2x - 9)(2x - 5) = 0$
   $x = 4\frac{1}{2}, 2\frac{1}{2}$

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

8. $6x^2 - 5x - 4 = 0$
   $(2x + 1)(3x - 4) = 0$
   $x = -\frac{1}{2}, 1\frac{1}{3}$

9. $8x^2 - 49x + 6 = 0$
   $(8x - 1)(x - 6) = 0$
   $x = \frac{1}{8}, 6$

10. $9x^2 - 65x + 14 = 0$
    $(x - 7)(9x - 2) = 0$
    $x = 7, \frac{2}{9}$

11. $4x^2 + 16x + 7 = 0$
    $(2x + 7)(2x + 1) = 0$
    $x = -3\frac{1}{2}, -\frac{1}{2}$

12. $8x^2 - 69x + 40 = 0$
    $(8x - 5)(x - 8) = 0$
    $x = \frac{5}{8}, 8$

13. $3x^2 - 17x + 10 = 0$
    $(3x - 2)(x - 5) = 0$
    $x = \frac{2}{3}, 5$

14. $6x^2 - 19x - 20 = 0$
    $(6x + 5)(x - 4) = 0$
    $x = -\frac{5}{6}, 4$

15. $3x^2 - 19x - 14 = 0$
    $(3x + 2)(x - 7) = 0$
    $x = -\frac{2}{3}, 7$

16. $6x^2 - 13x - 63 = 0$
    $(2x - 9)(3x + 7) = 0$
    $x = 4\frac{1}{2}, -2\frac{1}{3}$

17. $6x^2 - 25x - 25 = 0$
    $(x - 5)(6x + 5) = 0$
    $x = 5, -\frac{5}{6}$

18. $6x^2 + 31x + 35 = 0$
    $(2x + 7)(3x + 5) = 0$
    $x = -3\frac{1}{2}, -1\frac{2}{3}$

19. $8x^2 + 6x + 1 = 0$
    $(4x + 1)(2x + 1) = 0$
    $x = -\frac{1}{4}, -\frac{1}{2}$

20. $6x^2 + 13x - 5 = 0$
    $(3x - 1)(2x + 5) = 0$
    $x = \frac{1}{3}, -2\frac{1}{2}$

Solving Quadratic Equations (F)

Name: _____ Date: _____

Solve each equation for x.

1. $6x^2 + 5x - 56 = 0$
2. $8x^2 - 47x - 63 = 0$
3. $6x^2 - 13x - 15 = 0$
4. $7x^2 + 2x - 5 = 0$
5. $7x^2 + 37x + 10 = 0$
6. $3x^2 - 32x + 45 = 0$
7. $9x^2 - 18x + 8 = 0$
8. $6x^2 - 11x + 5 = 0$
9. $6x^2 - 41x - 56 = 0$
10. $9x^2 - 29x - 28 = 0$
11. $x^2 - 4x + 4 = 0$
12. $8x^2 - 45x - 18 = 0$
13. $7x^2 + 46x + 24 = 0$
14. $3x^2 - 8x - 35 = 0$
15. $6x^2 + 23x + 7 = 0$
16. $3x^2 + 10x + 3 = 0$
17. $7x^2 + 12x + 5 = 0$
18. $6x^2 - 11x - 72 = 0$
19. $8x^2 + 38x + 9 = 0$
20. $9x^2 + 70x - 16 = 0$

Solving Quadratic Equations (F) Answers

Name: _____ Date: _____

Solve each equation for x.

1. $6x^2 + 5x - 56 = 0$
   $(2x + 7)(3x - 8) = 0$
   $x = -3\frac{1}{2}, 2\frac{2}{3}$

2. $8x^2 - 47x - 63 = 0$
   $(8x + 9)(x - 7) = 0$
   $x = -1\frac{1}{8}, 7$

3. $6x^2 - 13x - 15 = 0$
   $(x - 3)(6x + 5) = 0$
   $x = 3, -\frac{5}{6}$

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

5. $7x^2 + 37x + 10 = 0$
   $(x + 5)(7x + 2) = 0$
   $x = -5, -\frac{2}{7}$

6. $3x^2 - 32x + 45 = 0$
   $(x - 9)(3x - 5) = 0$
   $x = 9, 1\frac{2}{3}$

7. $9x^2 - 18x + 8 = 0$
   $(3x - 2)(3x - 4) = 0$
   $x = \frac{2}{3}, 1\frac{1}{3}$

8. $6x^2 - 11x + 5 = 0$
   $(x - 1)(6x - 5) = 0$
   $x = 1, \frac{5}{6}$

9. $6x^2 - 41x - 56 = 0$
   $(6x + 7)(x - 8) = 0$
   $x = -1\frac{1}{6}, 8$

10. $9x^2 - 29x - 28 = 0$
    $(x - 4)(9x + 7) = 0$
    $x = 4, -\frac{7}{9}$

11. $x^2 - 4x + 4 = 0$
    $(x - 2)(x - 2) = (x - 2)^2 = 0$
    $x = 2$

12. $8x^2 - 45x - 18 = 0$
    $(x - 6)(8x + 3) = 0$
    $x = 6, -\frac{3}{8}$

13. $7x^2 + 46x + 24 = 0$
    $(7x + 4)(x + 6) = 0$
    $x = -\frac{4}{7}, -6$

14. $3x^2 - 8x - 35 = 0$
    $(3x + 7)(x - 5) = 0$
    $x = -2\frac{1}{3}, 5$

15. $6x^2 + 23x + 7 = 0$
    $(2x + 7)(3x + 1) = 0$
    $x = -3\frac{1}{2}, -\frac{1}{3}$

16. $3x^2 + 10x + 3 = 0$
    $(x + 3)(3x + 1) = 0$
    $x = -3, -\frac{1}{3}$

17. $7x^2 + 12x + 5 = 0$
    $(x + 1)(7x + 5) = 0$
    $x = -1, -\frac{5}{7}$

18. $6x^2 - 11x - 72 = 0$
    $(2x - 9)(3x + 8) = 0$
    $x = 4\frac{1}{2}, -2\frac{2}{3}$

19. $8x^2 + 38x + 9 = 0$
    $(2x + 9)(4x + 1) = 0$
    $x = -4\frac{1}{2}, -\frac{1}{4}$

20. $9x^2 + 70x - 16 = 0$
    $(9x - 2)(x + 8) = 0$
    $x = \frac{2}{9}, -8$

Solving Quadratic Equations (G)

Name: _____ Date: _____

Solve each equation for x.

1. $4x^2 - 37x + 40 = 0$
2. $8x^2 + 49x - 49 = 0$
3. $4x^2 + 9x + 5 = 0$
4. $4x^2 - 4x - 35 = 0$
5. $5x^2 - 39x + 28 = 0$
6. $4x^2 + 4x - 15 = 0$
7. $8x^2 - 14x - 15 = 0$
8. $4x^2 + 8x - 21 = 0$
9. $9x^2 + 27x + 8 = 0$
10. $5x^2 + 18x + 9 = 0$
11. $x^2 - 11x + 18 = 0$
12. $7x^2 - 20x + 12 = 0$
13. $5x^2 - 18x + 9 = 0$
14. $8x^2 + 7x - 1 = 0$
15. $2x^2 + 15x - 8 = 0$
16. $6x^2 - 7x + 1 = 0$
17. $6x^2 + 41x - 7 = 0$
18. $2x^2 + 5x - 42 = 0$
19. $8x^2 - 30x - 27 = 0$
20. $7x^2 - 71x + 72 = 0$

Solving Quadratic Equations (G) Answers

Name: _____ Date: _____

Solve each equation for x.

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

2. $8x^2 + 49x - 49 = 0$
   $(x+7)(8x-7) = 0$
   $x = -7, \frac{7}{8}$

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

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

5. $5x^2 - 39x + 28 = 0$
   $(x-7)(5x-4) = 0$
   $x = 7, \frac{4}{5}$

6. $4x^2 + 4x - 15 = 0$
   $(2x+5)(2x-3) = 0$
   $x = -2\frac{1}{2}, 1\frac{1}{2}$

7. $8x^2 - 14x - 15 = 0$
   $(2x-5)(4x+3) = 0$
   $x = 2\frac{1}{2}, -\frac{3}{4}$

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

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

10. $5x^2 + 18x + 9 = 0$
    $(x+3)(5x+3) = 0$
    $x = -3, -\frac{3}{5}$

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

12. $7x^2 - 20x + 12 = 0$
    $(7x-6)(x-2) = 0$
    $x = \frac{6}{7}, 2$

13. $5x^2 - 18x + 9 = 0$
    $(5x-3)(x-3) = 0$
    $x = \frac{3}{5}, 3$

14. $8x^2 + 7x - 1 = 0$
    $(x+1)(8x-1) = 0$
    $x = -1, \frac{1}{8}$

15. $2x^2 + 15x - 8 = 0$
    $(2x-1)(x+8) = 0$
    $x = \frac{1}{2}, -8$

16. $6x^2 - 7x + 1 = 0$
    $(6x-1)(x-1) = 0$
    $x = \frac{1}{6}, 1$

17. $6x^2 + 41x - 7 = 0$
    $(6x-1)(x+7) = 0$
    $x = \frac{1}{6}, -7$

18. $2x^2 + 5x - 42 = 0$
    $(2x-7)(x+6) = 0$
    $x = 3\frac{1}{2}, -6$

19. $8x^2 - 30x - 27 = 0$
    $(4x+3)(2x-9) = 0$
    $x = -\frac{3}{4}, 4\frac{1}{2}$

20. $7x^2 - 71x + 72 = 0$
    $(7x-8)(x-9) = 0$
    $x = 1\frac{1}{7}, 9$

Solving Quadratic Equations (H)

Name: _____ Date: _____

Solve each equation for x.

1. $x^2 + 2x - 15 = 0$
2. $9x^2 + 47x + 10 = 0$
3. $6x^2 - 17x - 3 = 0$
4. $3x^2 - 10x + 7 = 0$
5. $3x^2 - 14x - 24 = 0$
6. $9x^2 - 25x + 14 = 0$
7. $7x^2 - 15x + 8 = 0$
8. $4x^2 + 32x + 63 = 0$
9. $7x^2 + 31x - 20 = 0$
10. $6x^2 + 37x + 56 = 0$
11. $4x^2 - 27x + 18 = 0$
12. $7x^2 + 64x + 9 = 0$
13. $8x^2 + 6x - 5 = 0$
14. $8x^2 + 57x - 56 = 0$
15. $6x^2 + 11x - 2 = 0$
16. $5x^2 - 34x + 24 = 0$
17. $3x^2 + 23x + 14 = 0$
18. $9x^2 - 64 = 0$
19. $4x^2 - 21x - 49 = 0$
20. $4x^2 + 13x - 12 = 0$

Solving Quadratic Equations (H) Answers

Name: _____ Date: _____

Solve each equation for x.

1. $x^2 + 2x - 15 = 0$
   $(x-3)(x+5) = 0$
   $x = 3, -5$

2. $9x^2 + 47x + 10 = 0$
   $(9x+2)(x+5) = 0$
   $x = -\frac{2}{9}, -5$

3. $6x^2 - 17x - 3 = 0$
   $(6x+1)(x-3) = 0$
   $x = -\frac{1}{6}, 3$

4. $3x^2 - 10x + 7 = 0$
   $(x-1)(3x-7) = 0$
   $x = 1, 2\frac{1}{3}$

5. $3x^2 - 14x - 24 = 0$
   $(x-6)(3x+4) = 0$
   $x = 6, -1\frac{1}{3}$

6. $9x^2 - 25x + 14 = 0$
   $(x-2)(9x-7) = 0$
   $x = 2, \frac{7}{9}$

7. $7x^2 - 15x + 8 = 0$
   $(x-1)(7x-8) = 0$
   $x = 1, 1\frac{1}{7}$

8. $4x^2 + 32x + 63 = 0$
   $(2x+7)(2x+9) = 0$
   $x = -3\frac{1}{2}, -4\frac{1}{2}$

9. $7x^2 + 31x - 20 = 0$
   $(x+5)(7x-4) = 0$
   $x = -5, \frac{4}{7}$

10. $6x^2 + 37x + 56 = 0$
    $(2x+7)(3x+8) = 0$
    $x = -3\frac{1}{2}, -2\frac{2}{3}$

11. $4x^2 - 27x + 18 = 0$
    $(x-6)(4x-3) = 0$
    $x = 6, \frac{3}{4}$

12. $7x^2 + 64x + 9 = 0$
    $(7x+1)(x+9) = 0$
    $x = -\frac{1}{7}, -9$

13. $8x^2 + 6x - 5 = 0$
    $(2x-1)(4x+5) = 0$
    $x = \frac{1}{2}, -1\frac{1}{4}$

14. $8x^2 + 57x - 56 = 0$
    $(8x-7)(x+8) = 0$
    $x = \frac{7}{8}, -8$

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

16. $5x^2 - 34x + 24 = 0$
    $(x-6)(5x-4) = 0$
    $x = 6, \frac{4}{5}$

17. $3x^2 + 23x + 14 = 0$
    $(x+7)(3x+2) = 0$
    $x = -7, -\frac{2}{3}$

18. $9x^2 - 64 = 0$
    $(3x+8)(3x-8) = 0$
    $x = -2\frac{2}{3}, 2\frac{2}{3}$

19. $4x^2 - 21x - 49 = 0$
    $(4x+7)(x-7) = 0$
    $x = -1\frac{3}{4}, 7$

20. $4x^2 + 13x - 12 = 0$
    $(x+4)(4x-3) = 0$
    $x = -4, \frac{3}{4}$

Solving Quadratic Equations (I)

Name: _____ Date: _____

Solve each equation for x.

1. $9x^2 - 56x - 49 = 0$
2. $9x^2 - 62x - 7 = 0$
3. $6x^2 + 17x - 3 = 0$
4. $5x^2 + 27x - 18 = 0$
5. $x^2 - 5x + 6 = 0$
6. $4x^2 - 33x + 54 = 0$
7. $2x^2 + 21x + 54 = 0$
8. $3x^2 + 8x + 4 = 0$
9. $x^2 + x - 30 = 0$
10. $8x^2 - 17x + 9 = 0$
11. $2x^2 - x - 36 = 0$
12. $x^2 - 6x + 9 = 0$
13. $x^2 - 12x + 35 = 0$
14. $2x^2 - 19x + 9 = 0$
15. $4x^2 + 12x + 9 = 0$
16. $4x^2 + 5x - 6 = 0$
17. $8x^2 - 22x + 5 = 0$
18. $8x^2 + 63x - 81 = 0$
19. $3x^2 - 19x - 40 = 0$
20. $9x^2 + 58x + 24 = 0$

Solving Quadratic Equations (I) Answers

Name: _____ Date: _____

Solve each equation for x.

1. $9x^2 - 56x - 49 = 0$
   $(9x + 7)(x - 7) = 0$
   $x = -\frac{7}{9}, 7$

2. $9x^2 - 62x - 7 = 0$
   $(x - 7)(9x + 1) = 0$
   $x = 7, -\frac{1}{9}$

3. $6x^2 + 17x - 3 = 0$
   $(6x - 1)(x + 3) = 0$
   $x = \frac{1}{6}, -3$

4. $5x^2 + 27x - 18 = 0$
   $(x + 6)(5x - 3) = 0$
   $x = -6, \frac{3}{5}$

5. $x^2 - 5x + 6 = 0$
   $(x - 3)(x - 2) = 0$
   $x = 3, 2$

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

7. $2x^2 + 21x + 54 = 0$
   $(x + 6)(2x + 9) = 0$
   $x = -6, -4\frac{1}{2}$

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

9. $x^2 + x - 30 = 0$
   $(x - 5)(x + 6) = 0$
   $x = 5, -6$

10. $8x^2 - 17x + 9 = 0$
    $(8x - 9)(x - 1) = 0$
    $x = 1\frac{1}{8}, 1$

11. $2x^2 - x - 36 = 0$
    $(x + 4)(2x - 9) = 0$
    $x = -4, 4\frac{1}{2}$

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

13. $x^2 - 12x + 35 = 0$
    $(x - 5)(x - 7) = 0$
    $x = 5, 7$

14. $2x^2 - 19x + 9 = 0$
    $(2x - 1)(x - 9) = 0$
    $x = \frac{1}{2}, 9$

15. $4x^2 + 12x + 9 = 0$
    $(2x + 3)(2x + 3) = (2x + 3)^2 = 0$
    $x = -1\frac{1}{2}$

16. $4x^2 + 5x - 6 = 0$
    $(4x - 3)(x + 2) = 0$
    $x = \frac{3}{4}, -2$

17. $8x^2 - 22x + 5 = 0$
    $(2x - 5)(4x - 1) = 0$
    $x = 2\frac{1}{2}, \frac{1}{4}$

18. $8x^2 + 63x - 81 = 0$
    $(8x - 9)(x + 9) = 0$
    $x = 1\frac{1}{8}, -9$

19. $3x^2 - 19x - 40 = 0$
    $(3x + 5)(x - 8) = 0$
    $x = -1\frac{2}{3}, 8$

20. $9x^2 + 58x + 24 = 0$
    $(9x + 4)(x + 6) = 0$
    $x = -\frac{4}{9}, -6$

Solving Quadratic Equations (J)

Name: _____ Date: _____

Solve each equation for x.

1. $3x^2 - 20x - 63 = 0$
2. $9x^2 - 67x - 40 = 0$
3. $9x^2 - 38x - 35 = 0$
4. $6x^2 - 11x - 72 = 0$
5. $3x^2 - x - 4 = 0$
6. $2x^2 - 15x - 8 = 0$
7. $5x^2 - 3x - 2 = 0$
8. $4x^2 - 17x + 18 = 0$
9. $3x^2 - 4x + 1 = 0$
10. $3x^2 + 7x - 40 = 0$
11. $5x^2 + 41x - 36 = 0$
12. $4x^2 + 16x + 7 = 0$
13. $5x^2 - 19x + 12 = 0$
14. $9x^2 + 62x + 48 = 0$
15. $x^2 - 5x - 14 = 0$
16. $2x^2 + 13x + 18 = 0$
17. $3x^2 - x - 14 = 0$
18. $4x^2 - 25 = 0$
19. $8x^2 + 34x + 21 = 0$
20. $6x^2 - 19x + 15 = 0$

Solving Quadratic Equations (J) Answers

Name: _____ Date: _____

Solve each equation for x.

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

2. $9x^2 - 67x - 40 = 0$
   $(9x + 5)(x - 8) = 0$
   $x = -\frac{5}{9}, 8$

3. $9x^2 - 38x - 35 = 0$
   $(9x + 7)(x - 5) = 0$
   $x = -\frac{7}{9}, 5$

4. $6x^2 - 11x - 72 = 0$
   $(3x + 8)(2x - 9) = 0$
   $x = -2\frac{2}{3}, 4\frac{1}{2}$

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

6. $2x^2 - 15x - 8 = 0$
   $(x - 8)(2x + 1) = 0$
   $x = 8, -\frac{1}{2}$

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

8. $4x^2 - 17x + 18 = 0$
   $(x - 2)(4x - 9) = 0$
   $x = 2, 2\frac{1}{4}$

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

10. $3x^2 + 7x - 40 = 0$
    $(3x - 8)(x + 5) = 0$
    $x = 2\frac{2}{3}, -5$

11. $5x^2 + 41x - 36 = 0$
    $(x + 9)(5x - 4) = 0$
    $x = -9, \frac{4}{5}$

12. $4x^2 + 16x + 7 = 0$
    $(2x + 1)(2x + 7) = 0$
    $x = -\frac{1}{2}, -3\frac{1}{2}$

13. $5x^2 - 19x + 12 = 0$
    $(5x - 4)(x - 3) = 0$
    $x = \frac{4}{5}, 3$

14. $9x^2 + 62x + 48 = 0$
    $(9x + 8)(x + 6) = 0$
    $x = -\frac{8}{9}, -6$

15. $x^2 - 5x - 14 = 0$
    $(x + 2)(x - 7) = 0$
    $x = -2, 7$

16. $2x^2 + 13x + 18 = 0$
    $(2x + 9)(x + 2) = 0$
    $x = -4\frac{1}{2}, -2$

17. $3x^2 - x - 14 = 0$
    $(3x - 7)(x + 2) = 0$
    $x = 2\frac{1}{3}, -2$

18. $4x^2 - 25 = 0$
    $(2x - 5)(2x + 5) = 0$
    $x = 2\frac{1}{2}, -2\frac{1}{2}$

19. $8x^2 + 34x + 21 = 0$
    $(2x + 7)(4x + 3) = 0$
    $x = -3\frac{1}{2}, -\frac{3}{4}$

20. $6x^2 - 19x + 15 = 0$
    $(3x - 5)(2x - 3) = 0$
    $x = 1\frac{2}{3}, 1\frac{1}{2}$