Solving Quadratic Equations (A)

Name: _____ Date: _____

Solve each equation for x.

1. $-8x^2 + 74x - 18 = 0$
2. $-15x^2 + 96x - 36 = 0$
3. $-10x^2 + 5x + 15 = 0$
4. $-16x^2 - 64x - 60 = 0$
5. $20x^2 + 60x - 135 = 0$
6. $-10x^2 - 65x - 75 = 0$
7. $16x^2 + 84x + 80 = 0$
8. $-16x^2 + 60x + 100 = 0$
9. $-9x^2 - 39x - 12 = 0$
10. $9x^2 - 33x + 24 = 0$
11. $10x^2 + 65x + 90 = 0$
12. $8x^2 + 60x + 100 = 0$
13. $-8x^2 + 4x + 60 = 0$
14. $4x^2 + 2x - 30 = 0$
15. $16x^2 + 44x + 28 = 0$
16. $-12x^2 - 45x + 75 = 0$
17. $-3x^2 + 45x - 168 = 0$
18. $-12x^2 + 3 = 0$
19. $9x^2 - 12x + 3 = 0$
20. $-20x^2 + 35x + 180 = 0$

Solving Quadratic Equations (A) Answers

Name: _____ Date: _____

Solve each equation for x.

1. $-8x^2 + 74x - 18 = 0$
   $-2(4x - 1)(x - 9) = 0$
   $x = \frac{1}{4}, 9$

2. $-15x^2 + 96x - 36 = 0$
   $-3(5x - 2)(x - 6) = 0$
   $x = \frac{2}{5}, 6$

3. $-10x^2 + 5x + 15 = 0$
   $-5(x + 1)(2x - 3) = 0$
   $x = -1, 1\frac{1}{2}$

4. $-16x^2 - 64x - 60 = 0$
   $-4(2x + 5)(2x + 3) = 0$
   $x = -2\frac{1}{2}, -1\frac{1}{2}$

5. $20x^2 + 60x - 135 = 0$
   $5(2x + 9)(2x - 3) = 0$
   $x = -4\frac{1}{2}, 1\frac{1}{2}$

6. $-10x^2 - 65x - 75 = 0$
   $-5(2x + 3)(x + 5) = 0$
   $x = -1\frac{1}{2}, -5$

7. $16x^2 + 84x + 80 = 0$
   $4(x + 4)(4x + 5) = 0$
   $x = -4, -1\frac{1}{4}$

8. $-16x^2 + 60x + 100 = 0$
   $-4(4x + 5)(x - 5) = 0$
   $x = -1\frac{1}{4}, 5$

9. $-9x^2 - 39x - 12 = 0$
   $-3(x + 4)(3x + 1) = 0$
   $x = -4, -\frac{1}{3}$

10. $9x^2 - 33x + 24 = 0$
    $3(3x - 8)(x - 1) = 0$
    $x = 2\frac{2}{3}, 1$

11. $10x^2 + 65x + 90 = 0$
    $5(x + 2)(2x + 9) = 0$
    $x = -2, -4\frac{1}{2}$

12. $8x^2 + 60x + 100 = 0$
    $4(x + 5)(2x + 5) = 0$
    $x = -5, -2\frac{1}{2}$

13. $-8x^2 + 4x + 60 = 0$
    $-4(x - 3)(2x + 5) = 0$
    $x = 3, -2\frac{1}{2}$

14. $4x^2 + 2x - 30 = 0$
    $2(2x - 5)(x + 3) = 0$
    $x = 2\frac{1}{2}, -3$

15. $16x^2 + 44x + 28 = 0$
    $4(x + 1)(4x + 7) = 0$
    $x = -1, -1\frac{3}{4}$

16. $-12x^2 - 45x + 75 = 0$
    $-3(4x - 5)(x + 5) = 0$
    $x = 1\frac{1}{4}, -5$

17. $-3x^2 + 45x - 168 = 0$
    $-3(x - 8)(x - 7) = 0$
    $x = 8, 7$

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

19. $9x^2 - 12x + 3 = 0$
    $3(3x - 1)(x - 1) = 0$
    $x = \frac{1}{3}, 1$

20. $-20x^2 + 35x + 180 = 0$
    $-5(x - 4)(4x + 9) = 0$
    $x = 4, -2\frac{1}{4}$

Solving Quadratic Equations (B)

Name: _____ Date: _____

Solve each equation for x.

1. $-8x^2 + 8x - 2 = 0$
2. $6x^2 - 45x + 84 = 0$
3. $25x^2 + 90x + 45 = 0$
4. $2x^2 - 8x - 64 = 0$
5. $15x^2 - 78x + 72 = 0$
6. $16x^2 - 44x - 80 = 0$
7. $-8x^2 + 46x + 144 = 0$
8. $15x^2 - 126x - 81 = 0$
9. $-9x^2 + 69x + 24 = 0$
10. $2x^2 - 2x - 40 = 0$
11. $12x^2 + 12x - 45 = 0$
12. $-20x^2 - 115x - 75 = 0$
13. $20x^2 + 25x - 30 = 0$
14. $16x^2 - 44x + 28 = 0$
15. $8x^2 - 4x - 40 = 0$
16. $-12x^2 + 63x + 147 = 0$
17. $10x^2 - 5x - 105 = 0$
18. $-10x^2 + 78x - 108 = 0$
19. $8x^2 + 8x - 126 = 0$
20. $-3x^2 - 33x - 84 = 0$

Solving Quadratic Equations (B) Answers

Name: _____ Date: _____

Solve each equation for x.

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

2. $6x^2 - 45x + 84 = 0$
   $3(2x-7)(x-4) = 0$
   $x = 3\frac{1}{2}, 4$

3. $25x^2 + 90x + 45 = 0$
   $5(5x+3)(x+3) = 0$
   $x = -\frac{3}{5}, -3$

4. $2x^2 - 8x - 64 = 0$
   $2(x+4)(x-8) = 0$
   $x = -4, 8$

5. $15x^2 - 78x + 72 = 0$
   $3(x-4)(5x-6) = 0$
   $x = 4, 1\frac{1}{5}$

6. $16x^2 - 44x - 80 = 0$
   $4(4x+5)(x-4) = 0$
   $x = -1\frac{1}{4}, 4$

7. $-8x^2 + 46x + 144 = 0$
   $-2(4x+9)(x-8) = 0$
   $x = -2\frac{1}{4}, 8$

8. $15x^2 - 126x - 81 = 0$
   $3(5x+3)(x-9) = 0$
   $x = -\frac{3}{5}, 9$

9. $-9x^2 + 69x + 24 = 0$
   $-3(x-8)(3x+1) = 0$
   $x = 8, -\frac{1}{3}$

10. $2x^2 - 2x - 40 = 0$
    $2(x+4)(x-5) = 0$
    $x = -4, 5$

11. $12x^2 + 12x - 45 = 0$
    $3(2x+5)(2x-3) = 0$
    $x = -2\frac{1}{2}, 1\frac{1}{2}$

12. $-20x^2 - 115x - 75 = 0$
    $-5(4x+3)(x+5) = 0$
    $x = -\frac{3}{4}, -5$

13. $20x^2 + 25x - 30 = 0$
    $5(4x-3)(x+2) = 0$
    $x = \frac{3}{4}, -2$

14. $16x^2 - 44x + 28 = 0$
    $4(4x-7)(x-1) = 0$
    $x = 1\frac{3}{4}, 1$

15. $8x^2 - 4x - 40 = 0$
    $4(x+2)(2x-5) = 0$
    $x = -2, 2\frac{1}{2}$

16. $-12x^2 + 63x + 147 = 0$
    $-3(4x+7)(x-7) = 0$
    $x = -1\frac{3}{4}, 7$

17. $10x^2 - 5x - 105 = 0$
    $5(2x-7)(x+3) = 0$
    $x = 3\frac{1}{2}, -3$

18. $-10x^2 + 78x - 108 = 0$
    $-2(5x-9)(x-6) = 0$
    $x = 1\frac{4}{5}, 6$

19. $8x^2 + 8x - 126 = 0$
    $2(2x+9)(2x-7) = 0$
    $x = -4\frac{1}{2}, 3\frac{1}{2}$

20. $-3x^2 - 33x - 84 = 0$
    $-3(x+4)(x+7) = 0$
    $x = -4, -7$

Solving Quadratic Equations (C)

Name: _____ Date: _____

Solve each equation for x.

1. $6x^2 - 15x - 36 = 0$
2. $25x^2 - 35x - 120 = 0$
3. $-8x^2 + 30x + 8 = 0$
4. $-12x^2 - 40x - 32 = 0$
5. $-20x^2 - 100x - 105 = 0$
6. $-10x^2 - 15x + 135 = 0$
7. $8x^2 + 66x - 54 = 0$
8. $-4x^2 + 30x + 54 = 0$
9. $6x^2 - 21x - 90 = 0$
10. $15x^2 + 85x + 120 = 0$
11. $-10x^2 - 44x - 42 = 0$
12. $-5x^2 - 5x + 10 = 0$
13. $-8x^2 + 26x - 6 = 0$
14. $20x^2 - 85x + 90 = 0$
15. $-12x^2 - 104x - 192 = 0$
16. $-6x^2 - 69x - 135 = 0$
17. $-12x^2 - 8x + 84 = 0$
18. $-6x^2 + 33x - 15 = 0$
19. $-6x^2 - 38x + 144 = 0$
20. $-8x^2 + 162 = 0$

Solving Quadratic Equations (C) Answers

Name: _____ Date: _____

Solve each equation for x.

1. $6x^2 - 15x - 36 = 0$
   $3(x - 4)(2x + 3) = 0$
   $x = 4, -1\frac{1}{2}$

2. $25x^2 - 35x - 120 = 0$
   $5(5x + 8)(x - 3) = 0$
   $x = -1\frac{3}{5}, 3$

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

4. $-12x^2 - 40x - 32 = 0$
   $-4(x + 2)(3x + 4) = 0$
   $x = -2, -1\frac{1}{3}$

5. $-20x^2 - 100x - 105 = 0$
   $-5(2x + 7)(2x + 3) = 0$
   $x = -3\frac{1}{2}, -1\frac{1}{2}$

6. $-10x^2 - 15x + 135 = 0$
   $-5(x - 3)(2x + 9) = 0$
   $x = 3, -4\frac{1}{2}$

7. $8x^2 + 66x - 54 = 0$
   $2(x + 9)(4x - 3) = 0$
   $x = -9, \frac{3}{4}$

8. $-4x^2 + 30x + 54 = 0$
   $-2(2x + 3)(x - 9) = 0$
   $x = -1\frac{1}{2}, 9$

9. $6x^2 - 21x - 90 = 0$
   $3(x - 6)(2x + 5) = 0$
   $x = 6, -2\frac{1}{2}$

10. $15x^2 + 85x + 120 = 0$
    $5(x + 3)(3x + 8) = 0$
    $x = -3, -2\frac{2}{3}$

11. $-10x^2 - 44x - 42 = 0$
    $-2(5x + 7)(x + 3) = 0$
    $x = -1\frac{2}{5}, -3$

12. $-5x^2 - 5x + 10 = 0$
    $-5(x - 1)(x + 2) = 0$
    $x = 1, -2$

13. $-8x^2 + 26x - 6 = 0$
    $-2(x - 3)(4x - 1) = 0$
    $x = 3, \frac{1}{4}$

14. $20x^2 - 85x + 90 = 0$
    $5(x - 2)(4x - 9) = 0$
    $x = 2, 2\frac{1}{4}$

15. $-12x^2 - 104x - 192 = 0$
    $-4(3x + 8)(x + 6) = 0$
    $x = -2\frac{2}{3}, -6$

16. $-6x^2 - 69x - 135 = 0$
    $-3(x + 9)(2x + 5) = 0$
    $x = -9, -2\frac{1}{2}$

17. $-12x^2 - 8x + 84 = 0$
    $-4(x + 3)(3x - 7) = 0$
    $x = -3, 2\frac{1}{3}$

18. $-6x^2 + 33x - 15 = 0$
    $-3(x - 5)(2x - 1) = 0$
    $x = 5, \frac{1}{2}$

19. $-6x^2 - 38x + 144 = 0$
    $-2(x + 9)(3x - 8) = 0$
    $x = -9, 2\frac{2}{3}$

20. $-8x^2 + 162 = 0$
    $-2(2x + 9)(2x - 9) = 0$
    $x = -4\frac{1}{2}, 4\frac{1}{2}$

Solving Quadratic Equations (D)

Name: _____ Date: _____

Solve each equation for x.

1. $6x^2 - 45x - 81 = 0$
2. $-15x^2 + 50x + 240 = 0$
3. $10x^2 - 92x + 18 = 0$
4. $-25x^2 - 210x - 245 = 0$
5. $-20x^2 - 72x - 36 = 0$
6. $-8x^2 - 44x - 20 = 0$
7. $-9x^2 + 69x - 42 = 0$
8. $-20x^2 - 176x - 252 = 0$
9. $-16x^2 - 16x + 12 = 0$
10. $-3x^2 + 48x - 192 = 0$
11. $8x^2 + 84x + 160 = 0$
12. $-10x^2 - 62x - 60 = 0$
13. $-12x^2 + 76x + 288 = 0$
14. $-25x^2 + 120x + 25 = 0$
15. $-8x^2 - 108x - 324 = 0$
16. $-12x^2 - 15x - 3 = 0$
17. $25x^2 + 85x + 70 = 0$
18. $16x^2 + 164x + 180 = 0$
19. $-10x^2 + 2x + 36 = 0$
20. $-20x^2 + 156x - 216 = 0$

Solving Quadratic Equations (D) Answers

Name: _____ Date: _____

Solve each equation for x.

1. $6x^2 - 45x - 81 = 0$
   $3(x - 9)(2x + 3) = 0$
   $x = 9, -1\frac{1}{2}$

2. $-15x^2 + 50x + 240 = 0$
   $-5(3x + 8)(x - 6) = 0$
   $x = -2\frac{2}{3}, 6$

3. $10x^2 - 92x + 18 = 0$
   $2(x - 9)(5x - 1) = 0$
   $x = 9, \frac{1}{5}$

4. $-25x^2 - 210x - 245 = 0$
   $-5(x + 7)(5x + 7) = 0$
   $x = -7, -1\frac{2}{5}$

5. $-20x^2 - 72x - 36 = 0$
   $-4(5x + 3)(x + 3) = 0$
   $x = -\frac{3}{5}, -3$

6. $-8x^2 - 44x - 20 = 0$
   $-4(2x + 1)(x + 5) = 0$
   $x = -\frac{1}{2}, -5$

7. $-9x^2 + 69x - 42 = 0$
   $-3(3x - 2)(x - 7) = 0$
   $x = \frac{2}{3}, 7$

8. $-20x^2 - 176x - 252 = 0$
   $-4(5x + 9)(x + 7) = 0$
   $x = -1\frac{4}{5}, -7$

9. $-16x^2 - 16x + 12 = 0$
   $-4(2x - 1)(2x + 3) = 0$
   $x = \frac{1}{2}, -1\frac{1}{2}$

10. $-3x^2 + 48x - 192 = 0$
    $-3(x - 8)(x - 8) = -3(x - 8)^2 = 0$
    $x = 8$

11. $8x^2 + 84x + 160 = 0$
    $4(x + 8)(2x + 5) = 0$
    $x = -8, -2\frac{1}{2}$

12. $-10x^2 - 62x - 60 = 0$
    $-2(x + 5)(5x + 6) = 0$
    $x = -5, -1\frac{1}{5}$

13. $-12x^2 + 76x + 288 = 0$
    $-4(x - 9)(3x + 8) = 0$
    $x = 9, -2\frac{2}{3}$

14. $-25x^2 + 120x + 25 = 0$
    $-5(x - 5)(5x + 1) = 0$
    $x = 5, -\frac{1}{5}$

15. $-8x^2 - 108x - 324 = 0$
    $-4(2x + 9)(x + 9) = 0$
    $x = -4\frac{1}{2}, -9$

16. $-12x^2 - 15x - 3 = 0$
    $-3(4x + 1)(x + 1) = 0$
    $x = -\frac{1}{4}, -1$

17. $25x^2 + 85x + 70 = 0$
    $5(5x + 7)(x + 2) = 0$
    $x = -1\frac{2}{5}, -2$

18. $16x^2 + 164x + 180 = 0$
    $4(4x + 5)(x + 9) = 0$
    $x = -1\frac{1}{4}, -9$

19. $-10x^2 + 2x + 36 = 0$
    $-2(5x + 9)(x - 2) = 0$
    $x = -1\frac{4}{5}, 2$

20. $-20x^2 + 156x - 216 = 0$
    $-4(5x - 9)(x - 6) = 0$
    $x = 1\frac{4}{5}, 6$

Solving Quadratic Equations (E)

Name: _____ Date: _____

Solve each equation for x.

1. $-4x^2 + 18x + 70 = 0$
2. $-15x^2 - 72x - 48 = 0$
3. $-20x^2 - 160x - 315 = 0$
4. $20x^2 - 64x + 12 = 0$
5. $16x^2 - 100x + 144 = 0$
6. $-4x^2 - 64x - 256 = 0$
7. $6x^2 + 21x - 27 = 0$
8. $12x^2 - 52x + 48 = 0$
9. $4x^2 + 26x - 90 = 0$
10. $6x^2 + 20x + 6 = 0$
11. $-25x^2 + 230x - 45 = 0$
12. $4x^2 + 20x + 24 = 0$
13. $-10x^2 + 65x - 90 = 0$
14. $12x^2 + 44x - 16 = 0$
15. $16x^2 - 128x + 252 = 0$
16. $4x^2 - 6x - 28 = 0$
17. $-4x^2 + 8x + 12 = 0$
18. $2x^2 + 6x - 108 = 0$
19. $-2x^2 + 12x + 32 = 0$
20. $-6x^2 - 57x - 27 = 0$

Solving Quadratic Equations (E) Answers

Name: _____ Date: _____

Solve each equation for x.

1. $-4x^2 + 18x + 70 = 0$
   $-2(2x + 5)(x - 7) = 0$
   $x = -2\frac{1}{2}, 7$

2. $-15x^2 - 72x - 48 = 0$
   $-3(5x + 4)(x + 4) = 0$
   $x = -\frac{4}{5}, -4$

3. $-20x^2 - 160x - 315 = 0$
   $-5(2x + 7)(2x + 9) = 0$
   $x = -3\frac{1}{2}, -4\frac{1}{2}$

4. $20x^2 - 64x + 12 = 0$
   $4(x - 3)(5x - 1) = 0$
   $x = 3, \frac{1}{5}$

5. $16x^2 - 100x + 144 = 0$
   $4(4x - 9)(x - 4) = 0$
   $x = 2\frac{1}{4}, 4$

6. $-4x^2 - 64x - 256 = 0$
   $-4(x + 8)(x + 8) = -4(x + 8)^2 = 0$
   $x = -8$

7. $6x^2 + 21x - 27 = 0$
   $3(x - 1)(2x + 9) = 0$
   $x = 1, -4\frac{1}{2}$

8. $12x^2 - 52x + 48 = 0$
   $4(x - 3)(3x - 4) = 0$
   $x = 3, 1\frac{1}{3}$

9. $4x^2 + 26x - 90 = 0$
   $2(2x - 5)(x + 9) = 0$
   $x = 2\frac{1}{2}, -9$

10. $6x^2 + 20x + 6 = 0$
    $2(x + 3)(3x + 1) = 0$
    $x = -3, -\frac{1}{3}$

11. $-25x^2 + 230x - 45 = 0$
    $-5(x - 9)(5x - 1) = 0$
    $x = 9, \frac{1}{5}$

12. $4x^2 + 20x + 24 = 0$
    $4(x + 2)(x + 3) = 0$
    $x = -2, -3$

13. $-10x^2 + 65x - 90 = 0$
    $-5(2x - 9)(x - 2) = 0$
    $x = 4\frac{1}{2}, 2$

14. $12x^2 + 44x - 16 = 0$
    $4(x + 4)(3x - 1) = 0$
    $x = -4, \frac{1}{3}$

15. $16x^2 - 128x + 252 = 0$
    $4(2x - 7)(2x - 9) = 0$
    $x = 3\frac{1}{2}, 4\frac{1}{2}$

16. $4x^2 - 6x - 28 = 0$
    $2(2x - 7)(x + 2) = 0$
    $x = 3\frac{1}{2}, -2$

17. $-4x^2 + 8x + 12 = 0$
    $-4(x - 3)(x + 1) = 0$
    $x = 3, -1$

18. $2x^2 + 6x - 108 = 0$
    $2(x - 6)(x + 9) = 0$
    $x = 6, -9$

19. $-2x^2 + 12x + 32 = 0$
    $-2(x + 2)(x - 8) = 0$
    $x = -2, 8$

20. $-6x^2 - 57x - 27 = 0$
    $-3(x + 9)(2x + 1) = 0$
    $x = -9, -\frac{1}{2}$

Solving Quadratic Equations (F)

Name: _____ Date: _____

Solve each equation for x.

1. $12x^2 + 12x - 45 = 0$
2. $6x^2 + 69x + 135 = 0$
3. $10x^2 + 28x - 48 = 0$
4. $20x^2 - 80x + 75 = 0$
5. $20x^2 + 76x + 72 = 0$
6. $15x^2 + 69x - 126 = 0$
7. $9x^2 + 39x + 36 = 0$
8. $8x^2 - 54x + 70 = 0$
9. $-4x^2 + 42x - 54 = 0$
10. $2x^2 - 2 = 0$
11. $-8x^2 - 30x + 108 = 0$
12. $-8x^2 - 20x + 168 = 0$
13. $10x^2 + 15x - 135 = 0$
14. $-8x^2 + 8x + 30 = 0$
15. $-12x^2 + 27x + 84 = 0$
16. $-25x^2 + 30x + 40 = 0$
17. $10x^2 + 74x + 84 = 0$
18. $-25x^2 - 55x + 60 = 0$
19. $-4x^2 + 324 = 0$
20. $15x^2 + 70x + 40 = 0$

Solving Quadratic Equations (F) Answers

Name: _____ Date: _____

Solve each equation for x.

1. $12x^2 + 12x - 45 = 0$
   $3(2x - 3)(2x + 5) = 0$
   $x = 1\frac{1}{2}, -2\frac{1}{2}$

2. $6x^2 + 69x + 135 = 0$
   $3(2x + 5)(x + 9) = 0$
   $x = -2\frac{1}{2}, -9$

3. $10x^2 + 28x - 48 = 0$
   $2(x + 4)(5x - 6) = 0$
   $x = -4, 1\frac{1}{5}$

4. $20x^2 - 80x + 75 = 0$
   $5(2x - 3)(2x - 5) = 0$
   $x = 1\frac{1}{2}, 2\frac{1}{2}$

5. $20x^2 + 76x + 72 = 0$
   $4(5x + 9)(x + 2) = 0$
   $x = -1\frac{4}{5}, -2$

6. $15x^2 + 69x - 126 = 0$
   $3(5x - 7)(x + 6) = 0$
   $x = 1\frac{2}{5}, -6$

7. $9x^2 + 39x + 36 = 0$
   $3(x + 3)(3x + 4) = 0$
   $x = -3, -1\frac{1}{3}$

8. $8x^2 - 54x + 70 = 0$
   $2(x - 5)(4x - 7) = 0$
   $x = 5, 1\frac{3}{4}$

9. $-4x^2 + 42x - 54 = 0$
   $-2(2x - 3)(x - 9) = 0$
   $x = 1\frac{1}{2}, 9$

10. $2x^2 - 2 = 0$
    $2(x + 1)(x - 1) = 0$
    $x = -1, 1$

11. $-8x^2 - 30x + 108 = 0$
    $-2(x + 6)(4x - 9) = 0$
    $x = -6, 2\frac{1}{4}$

12. $-8x^2 - 20x + 168 = 0$
    $-4(2x - 7)(x + 6) = 0$
    $x = 3\frac{1}{2}, -6$

13. $10x^2 + 15x - 135 = 0$
    $5(x - 3)(2x + 9) = 0$
    $x = 3, -4\frac{1}{2}$

14. $-8x^2 + 8x + 30 = 0$
    $-2(2x + 3)(2x - 5) = 0$
    $x = -1\frac{1}{2}, 2\frac{1}{2}$

15. $-12x^2 + 27x + 84 = 0$
    $-3(x - 4)(4x + 7) = 0$
    $x = 4, -1\frac{3}{4}$

16. $-25x^2 + 30x + 40 = 0$
    $-5(5x + 4)(x - 2) = 0$
    $x = -\frac{4}{5}, 2$

17. $10x^2 + 74x + 84 = 0$
    $2(x + 6)(5x + 7) = 0$
    $x = -6, -1\frac{2}{5}$

18. $-25x^2 - 55x + 60 = 0$
    $-5(x + 3)(5x - 4) = 0$
    $x = -3, \frac{4}{5}$

19. $-4x^2 + 324 = 0$
    $-4(x - 9)(x + 9) = 0$
    $x = 9, -9$

20. $15x^2 + 70x + 40 = 0$
    $5(x + 4)(3x + 2) = 0$
    $x = -4, -\frac{2}{3}$

Solving Quadratic Equations (G)

Name: _____ Date: _____

Solve each equation for x.

1. $12x^2 - 4x - 16 = 0$
2. $-16x^2 + 96x - 108 = 0$
3. $-6x^2 + 3x + 45 = 0$
4. $10x^2 - 94x + 36 = 0$
5. $3x^2 + 15x - 72 = 0$
6. $8x^2 + 86x + 126 = 0$
7. $15x^2 + 40x - 80 = 0$
8. $9x^2 + 57x + 84 = 0$
9. $-15x^2 - 50x + 40 = 0$
10. $-4x^2 - 42x - 98 = 0$
11. $-4x^2 + 36x - 32 = 0$
12. $6x^2 + 45x + 75 = 0$
13. $3x^2 - 6x - 45 = 0$
14. $-20x^2 - 76x + 16 = 0$
15. $-8x^2 + 24x - 10 = 0$
16. $-10x^2 + 55x + 315 = 0$
17. $-16x^2 - 20x + 84 = 0$
18. $16x^2 - 128x + 252 = 0$
19. $5x^2 + 85x + 360 = 0$
20. $10x^2 - 75x - 40 = 0$

Solving Quadratic Equations (G) Answers

Name: _____ Date: _____

Solve each equation for x.

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

2. $-16x^2 + 96x - 108 = 0$
   $-4(2x - 3)(2x - 9) = 0$
   $x = 1\frac{1}{2}, 4\frac{1}{2}$

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

4. $10x^2 - 94x + 36 = 0$
   $2(x - 9)(5x - 2) = 0$
   $x = 9, \frac{2}{5}$

5. $3x^2 + 15x - 72 = 0$
   $3(x + 8)(x - 3) = 0$
   $x = -8, 3$

6. $8x^2 + 86x + 126 = 0$
   $2(4x + 7)(x + 9) = 0$
   $x = -1\frac{3}{4}, -9$

7. $15x^2 + 40x - 80 = 0$
   $5(3x - 4)(x + 4) = 0$
   $x = 1\frac{1}{3}, -4$

8. $9x^2 + 57x + 84 = 0$
   $3(3x + 7)(x + 4) = 0$
   $x = -2\frac{1}{3}, -4$

9. $-15x^2 - 50x + 40 = 0$
   $-5(3x - 2)(x + 4) = 0$
   $x = \frac{2}{3}, -4$

10. $-4x^2 - 42x - 98 = 0$
    $-2(x + 7)(2x + 7) = 0$
    $x = -7, -3\frac{1}{2}$

11. $-4x^2 + 36x - 32 = 0$
    $-4(x - 8)(x - 1) = 0$
    $x = 8, 1$

12. $6x^2 + 45x + 75 = 0$
    $3(2x + 5)(x + 5) = 0$
    $x = -2\frac{1}{2}, -5$

13. $3x^2 - 6x - 45 = 0$
    $3(x - 5)(x + 3) = 0$
    $x = 5, -3$

14. $-20x^2 - 76x + 16 = 0$
    $-4(5x - 1)(x + 4) = 0$
    $x = \frac{1}{5}, -4$

15. $-8x^2 + 24x - 10 = 0$
    $-2(2x - 1)(2x - 5) = 0$
    $x = \frac{1}{2}, 2\frac{1}{2}$

16. $-10x^2 + 55x + 315 = 0$
    $-5(x - 9)(2x + 7) = 0$
    $x = 9, -3\frac{1}{2}$

17. $-16x^2 - 20x + 84 = 0$
    $-4(x + 3)(4x - 7) = 0$
    $x = -3, 1\frac{3}{4}$

18. $16x^2 - 128x + 252 = 0$
    $4(2x - 7)(2x - 9) = 0$
    $x = 3\frac{1}{2}, 4\frac{1}{2}$

19. $5x^2 + 85x + 360 = 0$
    $5(x + 9)(x + 8) = 0$
    $x = -9, -8$

20. $10x^2 - 75x - 40 = 0$
    $5(x - 8)(2x + 1) = 0$
    $x = 8, -\frac{1}{2}$

Solving Quadratic Equations (H)

Name: _____ Date: _____

Solve each equation for x.

1. $10x^2 + 35x + 25 = 0$
2. $20x^2 + 68x - 160 = 0$
3. $20x^2 - 15x - 50 = 0$
4. $-20x^2 + 120x - 135 = 0$
5. $20x^2 + 76x - 120 = 0$
6. $3x^2 - 30x + 63 = 0$
7. $-6x^2 + 38x + 80 = 0$
8. $12x^2 - 99x + 162 = 0$
9. $2x^2 + 26x + 80 = 0$
10. $6x^2 + 57x + 27 = 0$
11. $20x^2 - 135x + 90 = 0$
12. $-4x^2 + 56x - 196 = 0$
13. $6x^2 + 81x + 243 = 0$
14. $-3x^2 + 12x + 63 = 0$
15. $12x^2 - 100x + 32 = 0$
16. $-16x^2 + 64x - 28 = 0$
17. $8x^2 - 62x - 16 = 0$
18. $12x^2 + 21x - 108 = 0$
19. $16x^2 - 148x + 252 = 0$
20. $20x^2 + 168x - 108 = 0$

Solving Quadratic Equations (H) Answers

Name: _____ Date: _____

Solve each equation for x.

1. $10x^2 + 35x + 25 = 0$
   $5(2x + 5)(x + 1) = 0$
   $x = -2\frac{1}{2}, -1$

2. $20x^2 + 68x - 160 = 0$
   $4(5x - 8)(x + 5) = 0$
   $x = 1\frac{3}{5}, -5$

3. $20x^2 - 15x - 50 = 0$
   $5(4x + 5)(x - 2) = 0$
   $x = -1\frac{1}{4}, 2$

4. $-20x^2 + 120x - 135 = 0$
   $-5(2x - 3)(2x - 9) = 0$
   $x = 1\frac{1}{2}, 4\frac{1}{2}$

5. $20x^2 + 76x - 120 = 0$
   $4(x + 5)(5x - 6) = 0$
   $x = -5, 1\frac{1}{5}$

6. $3x^2 - 30x + 63 = 0$
   $3(x - 3)(x - 7) = 0$
   $x = 3, 7$

7. $-6x^2 + 38x + 80 = 0$
   $-2(x - 8)(3x + 5) = 0$
   $x = 8, -1\frac{2}{3}$

8. $12x^2 - 99x + 162 = 0$
   $3(4x - 9)(x - 6) = 0$
   $x = 2\frac{1}{4}, 6$

9. $2x^2 + 26x + 80 = 0$
   $2(x + 5)(x + 8) = 0$
   $x = -5, -8$

10. $6x^2 + 57x + 27 = 0$
    $3(x + 9)(2x + 1) = 0$
    $x = -9, -\frac{1}{2}$

11. $20x^2 - 135x + 90 = 0$
    $5(x - 6)(4x - 3) = 0$
    $x = 6, \frac{3}{4}$

12. $-4x^2 + 56x - 196 = 0$
    $-4(x - 7)(x - 7) = -4(x - 7)^2 = 0$
    $x = 7$

13. $6x^2 + 81x + 243 = 0$
    $3(2x + 9)(x + 9) = 0$
    $x = -4\frac{1}{2}, -9$

14. $-3x^2 + 12x + 63 = 0$
    $-3(x - 7)(x + 3) = 0$
    $x = 7, -3$

15. $12x^2 - 100x + 32 = 0$
    $4(x - 8)(3x - 1) = 0$
    $x = 8, \frac{1}{3}$

16. $-16x^2 + 64x - 28 = 0$
    $-4(2x - 1)(2x - 7) = 0$
    $x = \frac{1}{2}, 3\frac{1}{2}$

17. $8x^2 - 62x - 16 = 0$
    $2(x - 8)(4x + 1) = 0$
    $x = 8, -\frac{1}{4}$

18. $12x^2 + 21x - 108 = 0$
    $3(x + 4)(4x - 9) = 0$
    $x = -4, 2\frac{1}{4}$

19. $16x^2 - 148x + 252 = 0$
    $4(4x - 9)(x - 7) = 0$
    $x = 2\frac{1}{4}, 7$

20. $20x^2 + 168x - 108 = 0$
    $4(x + 9)(5x - 3) = 0$
    $x = -9, \frac{3}{5}$

Solving Quadratic Equations (I)

Name: _____ Date: _____

Solve each equation for x.

1. $25x^2 + 60x + 35 = 0$
2. $-15x^2 - 130x - 175 = 0$
3. $-15x^2 - 84x - 45 = 0$
4. $8x^2 + 12x - 216 = 0$
5. $20x^2 - 112x - 196 = 0$
6. $-8x^2 + 8x + 30 = 0$
7. $9x^2 + 48x - 36 = 0$
8. $-10x^2 - 72x - 72 = 0$
9. $12x^2 + 12x - 45 = 0$
10. $16x^2 - 132x - 108 = 0$
11. $-20x^2 - 145x - 35 = 0$
12. $-20x^2 + 65x - 15 = 0$
13. $16x^2 - 4x - 72 = 0$
14. $15x^2 - 55x + 50 = 0$
15. $12x^2 + 56x - 96 = 0$
16. $-6x^2 - 39x - 60 = 0$
17. $16x^2 + 32x - 20 = 0$
18. $20x^2 + 160x + 315 = 0$
19. $-8x^2 + 38x + 126 = 0$
20. $15x^2 + 85x + 100 = 0$

Solving Quadratic Equations (I) Answers

Name: _____ Date: _____

Solve each equation for x.

1. $25x^2 + 60x + 35 = 0$
   $5(5x + 7)(x + 1) = 0$
   $x = -1\frac{2}{5}, -1$

2. $-15x^2 - 130x - 175 = 0$
   $-5(3x + 5)(x + 7) = 0$
   $x = -1\frac{2}{3}, -7$

3. $-15x^2 - 84x - 45 = 0$
   $-3(5x + 3)(x + 5) = 0$
   $x = -\frac{3}{5}, -5$

4. $8x^2 + 12x - 216 = 0$
   $4(x + 6)(2x - 9) = 0$
   $x = -6, 4\frac{1}{2}$

5. $20x^2 - 112x - 196 = 0$
   $4(5x + 7)(x - 7) = 0$
   $x = -1\frac{2}{5}, 7$

6. $-8x^2 + 8x + 30 = 0$
   $-2(2x + 3)(2x - 5) = 0$
   $x = -1\frac{1}{2}, 2\frac{1}{2}$

7. $9x^2 + 48x - 36 = 0$
   $3(x + 6)(3x - 2) = 0$
   $x = -6, \frac{2}{3}$

8. $-10x^2 - 72x - 72 = 0$
   $-2(5x + 6)(x + 6) = 0$
   $x = -1\frac{1}{5}, -6$

9. $12x^2 + 12x - 45 = 0$
   $3(2x - 3)(2x + 5) = 0$
   $x = 1\frac{1}{2}, -2\frac{1}{2}$

10. $16x^2 - 132x - 108 = 0$
    $4(4x + 3)(x - 9) = 0$
    $x = -\frac{3}{4}, 9$

11. $-20x^2 - 145x - 35 = 0$
    $-5(x + 7)(4x + 1) = 0$
    $x = -7, -\frac{1}{4}$

12. $-20x^2 + 65x - 15 = 0$
    $-5(4x - 1)(x - 3) = 0$
    $x = \frac{1}{4}, 3$

13. $16x^2 - 4x - 72 = 0$
    $4(x + 2)(4x - 9) = 0$
    $x = -2, 2\frac{1}{4}$

14. $15x^2 - 55x + 50 = 0$
    $5(3x - 5)(x - 2) = 0$
    $x = 1\frac{2}{3}, 2$

15. $12x^2 + 56x - 96 = 0$
    $4(x + 6)(3x - 4) = 0$
    $x = -6, 1\frac{1}{3}$

16. $-6x^2 - 39x - 60 = 0$
    $-3(2x + 5)(x + 4) = 0$
    $x = -2\frac{1}{2}, -4$

17. $16x^2 + 32x - 20 = 0$
    $4(2x + 5)(2x - 1) = 0$
    $x = -2\frac{1}{2}, \frac{1}{2}$

18. $20x^2 + 160x + 315 = 0$
    $5(2x + 7)(2x + 9) = 0$
    $x = -3\frac{1}{2}, -4\frac{1}{2}$

19. $-8x^2 + 38x + 126 = 0$
    $-2(4x + 9)(x - 7) = 0$
    $x = -2\frac{1}{4}, 7$

20. $15x^2 + 85x + 100 = 0$
    $5(3x + 5)(x + 4) = 0$
    $x = -1\frac{2}{3}, -4$

Solving Quadratic Equations (J)

Name: _____ Date: _____

Solve each equation for x.

1. $6x^2 - 45x + 84 = 0$
2. $8x^2 + 42x - 98 = 0$
3. $-8x^2 - 4x + 144 = 0$
4. $-6x^2 + 33x - 27 = 0$
5. $20x^2 - 4x - 24 = 0$
6. $20x^2 + 20x - 15 = 0$
7. $15x^2 + 99x + 120 = 0$
8. $20x^2 + 95x - 150 = 0$
9. $10x^2 - 5x - 5 = 0$
10. $20x^2 - 85x + 90 = 0$
11. $25x^2 + 90x + 80 = 0$
12. $-10x^2 - 15x - 5 = 0$
13. $12x^2 - 52x + 16 = 0$
14. $10x^2 - 35x + 30 = 0$
15. $20x^2 + 24x - 108 = 0$
16. $12x^2 - 12x - 189 = 0$
17. $20x^2 - 55x + 30 = 0$
18. $15x^2 + 65x - 150 = 0$
19. $20x^2 + 5x - 25 = 0$
20. $8x^2 + 66x + 16 = 0$

Solving Quadratic Equations (J) Answers

Name: _____ Date: _____

Solve each equation for x.

1. $6x^2 - 45x + 84 = 0$
   $3(2x - 7)(x - 4) = 0$
   $x = 3\frac{1}{2}, 4$

2. $8x^2 + 42x - 98 = 0$
   $2(x + 7)(4x - 7) = 0$
   $x = -7, 1\frac{3}{4}$

3. $-8x^2 - 4x + 144 = 0$
   $-4(x - 4)(2x + 9) = 0$
   $x = 4, -4\frac{1}{2}$

4. $-6x^2 + 33x - 27 = 0$
   $-3(2x - 9)(x - 1) = 0$
   $x = 4\frac{1}{2}, 1$

5. $20x^2 - 4x - 24 = 0$
   $4(x + 1)(5x - 6) = 0$
   $x = -1, 1\frac{1}{5}$

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

7. $15x^2 + 99x + 120 = 0$
   $3(x + 5)(5x + 8) = 0$
   $x = -5, -1\frac{3}{5}$

8. $20x^2 + 95x - 150 = 0$
   $5(4x - 5)(x + 6) = 0$
   $x = 1\frac{1}{4}, -6$

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

10. $20x^2 - 85x + 90 = 0$
    $5(x - 2)(4x - 9) = 0$
    $x = 2, 2\frac{1}{4}$

11. $25x^2 + 90x + 80 = 0$
    $5(x + 2)(5x + 8) = 0$
    $x = -2, -1\frac{3}{5}$

12. $-10x^2 - 15x - 5 = 0$
    $-5(2x + 1)(x + 1) = 0$
    $x = -\frac{1}{2}, -1$

13. $12x^2 - 52x + 16 = 0$
    $4(3x - 1)(x - 4) = 0$
    $x = \frac{1}{3}, 4$

14. $10x^2 - 35x + 30 = 0$
    $5(2x - 3)(x - 2) = 0$
    $x = 1\frac{1}{2}, 2$

15. $20x^2 + 24x - 108 = 0$
    $4(x + 3)(5x - 9) = 0$
    $x = -3, 1\frac{4}{5}$

16. $12x^2 - 12x - 189 = 0$
    $3(2x + 7)(2x - 9) = 0$
    $x = -3\frac{1}{2}, 4\frac{1}{2}$

17. $20x^2 - 55x + 30 = 0$
    $5(x - 2)(4x - 3) = 0$
    $x = 2, \frac{3}{4}$

18. $15x^2 + 65x - 150 = 0$
    $5(3x - 5)(x + 6) = 0$
    $x = 1\frac{2}{3}, -6$

19. $20x^2 + 5x - 25 = 0$
    $5(4x + 5)(x - 1) = 0$
    $x = -1\frac{1}{4}, 1$

20. $8x^2 + 66x + 16 = 0$
    $2(x + 8)(4x + 1) = 0$
    $x = -8, -\frac{1}{4}$