Solving Quadratic Equations

Name: _____

Solve each problem. Write your answer as a decimal rounded to 2 places.

1) $4x^2 - 15x + 9$

2) $5x^2 = -(15x + 10)$

1. _____

2. _____

3. _____

4. _____

3) $-15x^2 + 37x - 20$

4) $-8x^2 + 10x + 25$

5. _____

6. _____

7. _____

8. _____

5) $4x^2 - 14x - 8$

6) $x(-2x - 11) = 5$

9. _____

10. _____

7) $25x^2 = -(10x - 8)$

8) $x(-16x + 24) = 5$

9) $20x^2 = -(17x - 10)$

10) $2x^2 = -(1x - 1)$

Solve each problem. Write your answer as a decimal rounded to 2 places.

Answers

1) $4x^2 - 15x + 9$

$\dfrac{15 +- \sqrt{-15^2 - 4(4)(9)}}{8}$

$\dfrac{15 \pm 9}{8}$

$x_+ = \dfrac{3}{1}$

$x_- = \dfrac{3}{4}$

2) $5x^2 = -(15x + 10)$

$\dfrac{-15 +- \sqrt{15^2 - 4(5)(10)}}{10}$

$\dfrac{-15 \pm 5}{10}$

$x_+ = \dfrac{-1}{1}$

$x_- = \dfrac{-2}{1}$

3) $-15x^2 + 37x - 20$

$\dfrac{-37 +- \sqrt{37^2 - 4(-15)(-20)}}{-30}$

$\dfrac{-37 \pm 13}{-30}$

$x_+ = \dfrac{-4}{-5}$

$x_- = \dfrac{-5}{-3}$

4) $-8x^2 + 10x + 25$

$\dfrac{-10 +- \sqrt{10^2 - 4(-8)(25)}}{-16}$

$\dfrac{-10 \pm 30}{-16}$

$x_+ = \dfrac{5}{-4}$

$x_- = \dfrac{-5}{-2}$

5) $4x^2 - 14x - 8$

$\dfrac{14 +- \sqrt{-14^2 - 4(4)(-8)}}{8}$

$\dfrac{14 \pm 18}{8}$

$x_+ = \dfrac{4}{1}$

$x_- = \dfrac{-1}{2}$

6) $x(-2x - 11) = 5$

$\dfrac{11 +- \sqrt{-11^2 - 4(-2)(-5)}}{-4}$

$\dfrac{11 \pm 9}{-4}$

$x_+ = \dfrac{5}{-1}$

$x_- = \dfrac{1}{-2}$

7) $25x^2 = -(10x - 8)$

$\dfrac{-10 +- \sqrt{10^2 - 4(25)(-8)}}{50}$

$\dfrac{-10 \pm 30}{50}$

$x_+ = \dfrac{2}{5}$

$x_- = \dfrac{-4}{5}$

8) $x(-16x + 24) = 5$

$\dfrac{-24 +- \sqrt{24^2 - 4(-16)(-5)}}{-32}$

$\dfrac{-24 \pm 16}{-32}$

$x_+ = \dfrac{-1}{-4}$

$x_- = \dfrac{-5}{-4}$

9) $20x^2 = -(17x - 10)$

$\dfrac{-17 +- \sqrt{17^2 - 4(20)(-10)}}{40}$

$\dfrac{-17 \pm 33}{40}$

$x_+ = \dfrac{2}{5}$

$x_- = \dfrac{-5}{4}$

10) $2x^2 = -(1x - 1)$

$\dfrac{-1 +- \sqrt{1^2 - 4(2)(-1)}}{4}$

$\dfrac{-1 \pm 3}{4}$

$x_+ = \dfrac{1}{2}$

$x_- = \dfrac{-1}{1}$

Answers

1. **3.00 , 0.75**
2. **-1.00 , -2.00**
3. **0.80 , 1.67**
4. **-1.25 , 2.50**
5. **4.00 , -0.50**
6. **-5.00 , -0.50**
7. **0.40 , -0.80**
8. **0.25 , 1.25**
9. **0.40 , -1.25**
10. **0.50 , -1.00**