

Solve quadratic equations by factoring

1. $3x^2 + 8x + 5 = 0$

1. $2x^2 + 7x + 5 = 0$

1. $3x^2 + 16x + 5 = 0$

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

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

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

$$x = -\frac{5}{2} \quad x = -1$$

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

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

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

$$x = \frac{7}{3} \quad x = 1$$

$$x = \frac{2}{3} \quad x = -1$$

Solve for x by factoring

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

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

4. $4x^2 - 14x + 10 = 0$

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

5. $x = -\frac{2}{3}, x = 1$

5. $x^2 + 7x + 6 = 0$

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

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

$x = -1, x = -6$

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

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

$x = 4, x = 2$

Solve for x by factoring

7. $4x^2 - 25 = 0$

7. $9x^2 - 16 = 0$

7. $16x^2 - 49 = 0$

$$x = -\frac{4}{3} \quad x = \frac{4}{3}$$

8. $121x^2 - 225 = 0$

8. $144x^2 - 169 = 0$

8. $81x^2 - 196 = 0$

$$x = -\frac{13}{12} \quad x = \frac{13}{12}$$

9. $16x^2 - 225 = 0$

9. $225x^2 - 9 = 0$

9. $25x^2 - 256 = 0$

Solve by using the Quadratic Formula

1. $3x^2 + 8x + 5 = 0$

a = b = c =

$$x = \frac{-(\quad) \pm \sqrt{(\quad)^2 - 4(\quad)(\quad)}}{2(\quad)}$$

1. $3x^2 + 10x + 3 = 0$

a = b = c =

$$x = \frac{-(\quad) \pm \sqrt{(\quad)^2 - 4(\quad)(\quad)}}{2(\quad)}$$

1. $3x^2 + 7x + 2 = 0$

a = b = c =

$$x = \frac{-(\quad) \pm \sqrt{(\quad)^2 - 4(\quad)(\quad)}}{2(\quad)}$$

$$x = -\frac{1}{3} \quad x = -3$$

Solve by using the Quadratic Formula

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

$a = \quad b = \quad c =$

$$x = \frac{-(\quad) \pm \sqrt{(\quad)^2 - 4(\quad)(\quad)}}{2(\quad)}$$

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

$a = \quad b = \quad c =$

$$x = \frac{-(\quad) \pm \sqrt{(\quad)^2 - 4(\quad)(\quad)}}{2(\quad)}$$

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

$a = \quad b = \quad c =$

$$x = \frac{-(\quad) \pm \sqrt{(\quad)^2 - 4(\quad)(\quad)}}{2(\quad)}$$

$$x = \frac{5}{3}$$

$$x = 0$$

Solve by using the Quadratic Formula

3. $16x^2 - 25 = 0$

a = b = c =

$$x = \frac{-(\) \pm \sqrt{(\)^2 - 4(\)(\)}}{2(\)}$$

3. $25x^2 - 16 = 0$

a = b = c =

$$x = \frac{-(\) \pm \sqrt{(\)^2 - 4(\)(\)}}{2(\)}$$

3. $9x^2 - 49 = 0$

a = b = c =

$$x = \frac{-(\) \pm \sqrt{(\)^2 - 4(\)(\)}}{2(\)}$$

$$x = \frac{4}{5}$$

$$x = -\frac{4}{5}$$

Solve by using the Quadratic Formula

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

a = b = c =

$$x = \frac{-(\) \pm \sqrt{(\)^2 - 4(\)(\)}}{2(\)}$$

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

a = b = c =

$$x = \frac{-(\) \pm \sqrt{(\)^2 - 4(\)(\)}}{2(\)}$$

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

a = b = c =

$$x = \frac{-(\) \pm \sqrt{(\)^2 - 4(\)(\)}}{2(\)}$$

$x = 3$

$x = -1$

Solve by using the Quadratic Formula

5. $4x^2 - 11x - 3 = 0$

$a = \quad b = \quad c =$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

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

$a = \quad b = \quad c =$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

5. $3x^2 - 10x - 8 = 0$

$a = \quad b = \quad c =$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{1}{2} \quad x = -5$$

Solve by Completing the Square

1. $x^2 - 8x + 7 = 0$

1. $x^2 - 10x + 24 = 0$

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

$x = 6$

$x = 4$

Solve by Completing the Square

2. $x^2 + 10x + 21 = 0$

2. $x^2 + 12x + 35 = 0$

2. $x^2 + 14x + 40 = 0$

$x = -7$

$x = -5$

Solve by Completing the Square

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

3. $x^2 - 5x - 6 = 0$

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

$x = -1 \quad x = 6$

Solve by Completing the Square

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

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

4. $x^2 - 11x + 30 = 0$

$x = 6$

$x = 1$

Solve by Completing the Square

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

5. $x^2 + 9x - 10 = 0$

5. $x^2 + 7x - 18 = 0$

$x = -10 \quad x = 1$

Convert inequalities to and from set notation, graph, and interval notation

1. $x \leq 5$

Graph:

Interval N:

1. $x \geq 5$

Graph:

Interval N:

1. $x < 5$

Graph:

Interval N:

2. $x > -4$

Graph:

Interval N:

2. $x \leq -17$

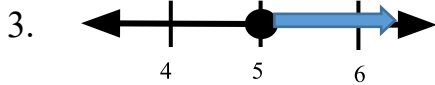
Graph:

Interval N:

2. $x > -9$

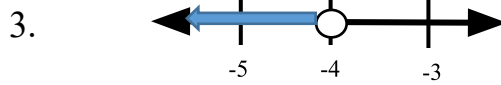
Graph:

Interval N:



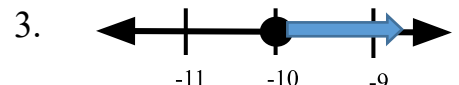
Set Notation

Interval N:



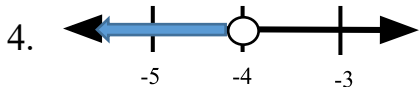
Set Notation

Interval N:



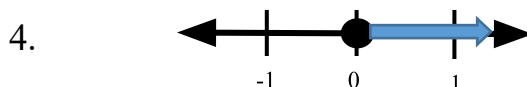
Set Notation:

Interval N:



Set Notation:

Interval N:



Set Notation

Interval N:



Set Notation:

Interval N:

Convert inequalities to and from set notation, graph, and interval notation

5. $[2, \infty)$

Graph:

Set Notation:

5. $(-\infty, 4)$

Graph:

Set Notation:

5. $(-3, \infty)$

Graph:

Set Notation:

6. $(-\infty, -4)$

Graph:

Set Notation:

6. $(-\infty, 0]$

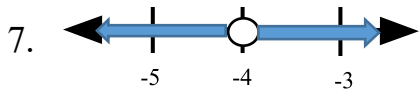
Graph:

Set Notation:

6. $(-\infty, 10]$

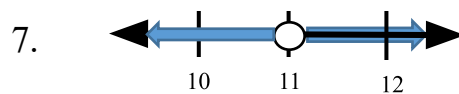
Graph:

Set Notation:



Set Notation:

Interval N:



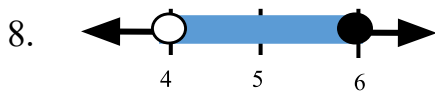
Set Notation

Interval N:

7. $(-\infty, 2) \cup (2, \infty)$

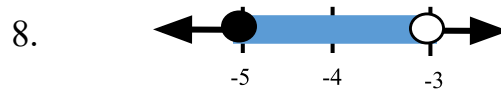
Graph:

Set Notation:



Set Notation

Interval N:



Set Notation

Interval N:

8. $(-5, 2)$

Graph:

Set Notation:

Solving Inequalities

[24.1]

Solve for x:

1. $x + 6 < 13$

1. $x - 8 > -15$

1. $x + 11 \leq -9$

2. $13 \leq x - 4$

2. $14 \geq x - 8$

2. $-1 < x + 15$

3. $-x + 3 > -11$

3. $-x - 5 \geq -14$

3. $-x + 12 < 21$

$$x > -7$$



$$(-7, \infty)$$

-7

$$x \leq 22$$


$$(-\infty, 22]$$

22

$$x \leq 9$$


$$(-\infty, 9]$$

9

Solve for x:

4. $-24 \geq -13 - x$

4. $-16 > -12 - x$

4. $19 \leq 23 - x$

5. $10 - x \geq -13$

5. $22 - x > -12$

5. $-9 \leq -20 - x$

6. $-14 < -x - 10$


6. $16 \leq -x + 17$

6. $-19 > -23 - x$

$$x > 4$$



$$(4, \infty)$$

4

$$x < 34$$


$$(-\infty, 34)$$

34

$$x \leq 1$$


$$(-\infty, 1]$$

1

Solve for x:

1. $2 < x + 6 \leq 13$

1. $-15 \leq x - 8 \leq 18$

1. $-4 < x + 1 \leq 1$

2. $4 \leq 2x - 8 < 10$

$$-7 \leq x \leq 26 \quad [-7, 26] \quad -7 \quad 26$$


2. $13 \leq 3x - 8 < 19$


2. $-5 < 5x + 15 < 20$

3. $1 < \frac{x-5}{2} < 3$

$$7 \leq x < 9 \quad [7, 9) \quad 7 \quad 9$$


3. $-2 < \frac{x+3}{3} \leq 5$

3. $-8 < \frac{x-2}{4} \leq -1$

$$-9 < x \leq 12 \quad (-9, 12] \quad -9 \quad 12$$


Solve for x:

4. $|2x + 6| < 10$

4. $|3x + 6| \leq 18$

4. $|2x - 6| < 10$

5. $|3x - 9| \leq 12$

5. $|2x - 19| < 11$

5. $|4x + 6| \leq 10$

$$-8 \leq x \leq 4$$

$$4 < x < 15$$

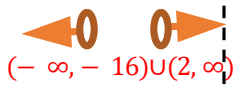
Solve for x:

6. $|x + 6| > 5$

6. $|x + 7| > 9$

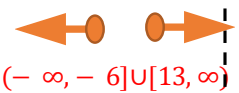
6. $|x - 9| \geq 12$

7. $|4x - 6| \geq 14$

$$x < -16 \text{ or } x > 2 \quad (-\infty, -16) \cup (2, \infty)$$


7. $|2x - 7| \geq 19$

7. $|3x + 9| \geq 12$

$$x \leq -6 \text{ or } x \geq 13 \quad (-\infty, -6] \cup [13, \infty)$$


Solve for x:

8. $|3x + 27| \leq 12$

8. $|2x + 19| < 11$

8. $|4x + 6| \leq 2$

9. $|2x + 10| > 10$

9. $|3x + 18| \geq 18$

9. $|2x + 12| > 10$