Quadratic Inequalities in One Variable
Solving Algebraically

Example 1: Solve. $x^2 - 3x - 10 < 0$

- Factor:
- The product of _____ is negative, thus there are 2 cases to consider:

Case I: (+)(−)

Case II: (−)(+)

Combining the results of the two cases gives the overall solution:

Example 2: Solve. $x^2 - 7x - 7 \leq -15$

- Set the left side less or equal to zero

- Factor:

- The product of _____ is negative, thus there are 2 cases to consider:

Case I: (+)(-)

Case II: (-)(+)

Combining the results of the two cases gives the overall solution:

Example 3: Solve. $3x^2 + 3x \leq 60$

- Set the left side less or equal to zero

- Factor:

- The product of _____ is negative, thus there are 2 cases to consider:

Case I: (+)(-)

Case II: (-)(+)

Combining the results of the two cases gives the overall solution:

Example 4: *Solve.* $x^2 + 12x \leq -35$

- Set the left side less or equal to zero

- Factor:

- The product of _____ is negative, thus there are 2 cases to consider:

Case I: (+)(-)

Case II: (-)(+)

Combining the results of the two cases gives the overall solution: