



Solution

$$(x + 2)(x - 5) > 0 \quad : \quad \left[\begin{array}{l} \text{Solution:} \quad x < -2 \quad \text{or} \quad x > 5 \\ \text{Interval Notation:} \quad (-\infty, -2) \cup (5, \infty) \end{array} \right]$$

Steps

$$(x + 2)(x - 5) > 0$$

Compute the signs of the factors of $(x + 2)(x - 5)$

Compute the signs of $x + 2$

Hide Steps

$$x + 2 \text{ is zero for: } x = -2$$

Hide Steps

$$x + 2 = 0$$

Subtract 2 from both sides

$$x + 2 - 2 = 0 - 2$$

Simplify

$$x = -2$$

$$x + 2 \text{ is negative for: } x < -2$$

Hide Steps

$$x + 2 < 0$$

Subtract 2 from both sides

$$x + 2 - 2 < 0 - 2$$

Simplify

$$x < -2$$

$$x + 2 \text{ is positive for: } x > -2$$

Hide Steps

$$x + 2 > 0$$

Subtract 2 from both sides

$$x + 2 - 2 > 0 - 2$$

Simplify

$$x > -2$$

Compute the signs of $x - 5$

Hide Steps

 $x - 5$ is zero for: $x = 5$

Hide Steps

$$x - 5 = 0$$

Add 5 to both sides

$$x - 5 + 5 = 0 + 5$$

Simplify

$$x = 5$$

 $x - 5$ is negative for: $x < 5$

Hide Steps

$$x - 5 < 0$$

Add 5 to both sides

$$x - 5 + 5 < 0 + 5$$

Simplify

$$x < 5$$

 $x - 5$ is positive for: $x > 5$

Hide Steps

$$x - 5 > 0$$

Add 5 to both sides

$$x - 5 + 5 > 0 + 5$$

Simplify

$$x > 5$$

Summarize in a table:

	$x < -2$	$x = -2$	$-2 < x < 5$	$x = 5$	$x > 5$
+ 2	-	0	+	+	+
- 5	-	-	-	0	+
$(x - 5)$	+	0	-	0	+

Choosing ranges that satisfy the required condition: > 0

$$x < -2 \quad \text{or} \quad x > 5$$

Number Line



Graph

