

Maths

Solve simple quadratic inequalities

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Solve simple quadratic inequalities

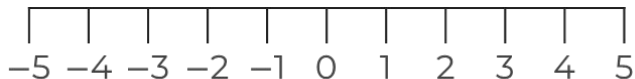
1. a) Solve $x^2 < 16$

$$x^2 < 16$$

$$\sqrt{x^2} < \sqrt{16}$$

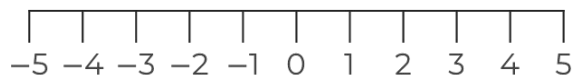
$$x < \underline{\hspace{2cm}} \text{ OR } x > \underline{\hspace{2cm}}$$

b) Represent this solution on a number line.

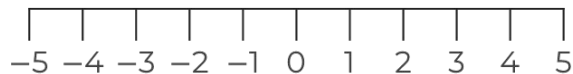


2. Show the solutions to the following inequalities on a number line

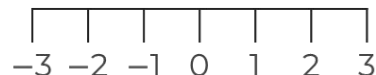
a) $x^2 \geq 9$



b) $x^2 > 4$



c) $x^2 \leq 0.25$



Solve simple quadratic inequalities

3. a) Solve $2x^2 + 11 \leq 61$

$$2x^2 + 11 \leq 61$$

$$2x^2 \leq$$

$$\frac{2x^2}{2} \leq \frac{\quad}{2}$$

$$\sqrt{x^2} \leq \sqrt{\quad}$$

$$x \leq \quad \text{ OR } x \geq \quad$$

b) Represent the solution using set notation.

$$\{x: \boxed{\quad} \leq x \leq \boxed{\quad}\}$$

4. Solve the following inequalities and represent each solution using set notation.

a) $x^2 - 7 > 93$

b) $3x^2 < 147$

c) $\frac{x^2 + 8}{3} \geq 24$



Answers



Solve simple quadratic inequalities

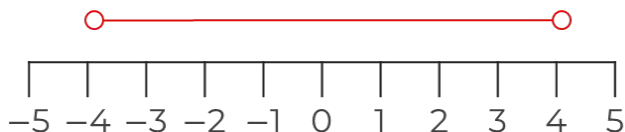
1. a) Solve $x^2 < 16$

$$x^2 < 16$$

$$\sqrt{x^2} < \sqrt{16}$$

$$x < \underline{4} \text{ OR } x > \underline{-4}$$

b) Represent this solution on a number line.



2. Show the solutions to the following inequalities on a number line

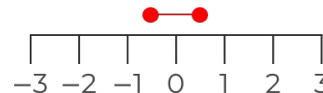
a) $x^2 \geq 9$



b) $x^2 > 4$



c) $x^2 \leq 0.25$



Solve simple quadratic inequalities

3. a) Solve $2x^2 + 11 \leq 61$

$$2x^2 + 11 \leq 61$$

$$2x^2 \leq 50$$

$$\frac{2x^2}{2} \leq \frac{50}{2}$$

$$\sqrt{x^2} \leq \sqrt{25}$$

$$x \leq 5 \text{ OR } x \geq -5$$

b) Represent the solution using set notation.

$$\{x: -5 \leq x \leq 5\}$$

4. Solve the following inequalities and represent each solution using set notation.

a) $x^2 - 7 > 93$

$$\{x: x > 10 \cup x < -10\}$$

$$x > 10 \text{ or } x < -10$$

b) $3x^2 < 147$

$$x < 7 \text{ or } x > -7$$

$$\{x: -7 < x < 7\}$$

c) $\frac{x^2 + 8}{3} \geq 24$

$$x \geq 8 \text{ or } x \leq -8$$

$$\{x: x \geq 8 \cup x \leq -8\}$$

