Solving Linear Inequalities

Year 9–10 Maths · Years 9–10 · About 20 minutes · 8 questions

Name _____ Date _____ Score / 8

WHAT YOU WILL PRACTISE

- Solve linear inequalities in one variable
- Reverse the inequality sign when dividing by a negative number
- List the integers that satisfy an inequality

WORKED EXAMPLE

Solve $7 - 3x \geq 1$.

1. Subtract 7 from both sides: $-3x \geq -6$.
2. Divide both sides by -3 and reverse the sign, because you are dividing by a negative number: $x \leq 2$.
3. Check with $x = 2$: $7 - 6 = 1$, which is equal to 1, so the boundary is correct.

Answer: $x \leq 2$

Questions

Show your working in the space under each question.

1. Solve $x + 4 > 9$

2. Solve $3x \leq 18$

3. Solve $2x - 5 < 9$

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4. Solve $4x + 3 \geq 23$

5. Solve $5x - 2 > 3x + 8$

6. Solve $3(x - 2) \leq 12$

7. Solve $-2x < 10$

8. List the integers that satisfy $-2 < x \leq 3$

Answers: Solving Linear Inequalities

Mark your own work, then go back to any question you got wrong before reading the tutor tip.

Q	QUESTION	ANSWER
1	Solve $x + 4 > 9$	**$x > 5$**
2	Solve $3x \leq 18$	**$x \leq 6$**
3	Solve $2x - 5 < 9$	**$x < 7$**
4	Solve $4x + 3 \geq 23$	**$x \geq 5$**
5	Solve $5x - 2 > 3x + 8$	**$x > 5$**
6	Solve $3(x - 2) \leq 12$	**$x \leq 6$**
7	Solve $-2x < 10$	**$x > -5$**
8	List the integers that satisfy $-2 < x \leq 3$	**$-1, 0, 1, 2, 3$**

TUTOR TIP

Solve it like an equation, but reverse the inequality sign whenever you multiply or divide both sides by a negative number.

Stuck on a question? Work through it live with a tutor.

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