

Linear Inequalities: Worksheet 1

Algebra · Solving inequalities in one unknown, showing them on a number line, and using them in real life

Name: _____ Class: _____ Date: _____

Score: _____ / 42

Worked example. Solve $2x + 1 > 9$. $2x > 8$ so $x > 4$.

Remember: when you multiply or divide both sides by a negative number, reverse the inequality sign.

Section A: Solve each inequality. Show your working.

20 marks

1. $x + 5 > 12$

[2]

.....

3. $2x - 4 < 10$

[2]

.....

5. $4 - x > 1$

[2]

.....

7. $7 - 2x \leq 1$

[2]

.....

9. $3(x - 2) < 15$

[2]

.....

2. $3x \leq 18$

[2]

.....

4. $5x + 3 \geq 28$

[2]

.....

6. $-3x < 12$

[2]

.....

8. $\frac{x}{2} + 3 > 5$

[2]

.....

10. $2x + 1 \geq x + 6$

[2]

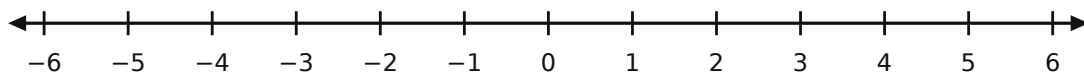
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Section B: Number lines

9 marks

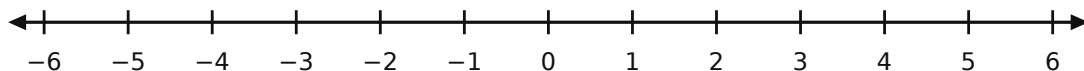
11. Show $x > 2$ on the number line.

[2]



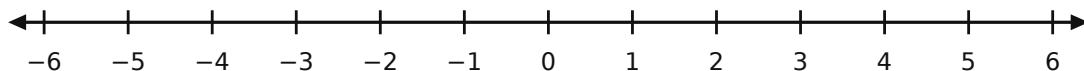
12. Show $x \leq -1$ on the number line.

[2]



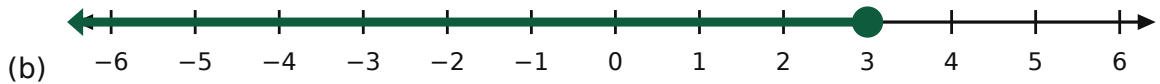
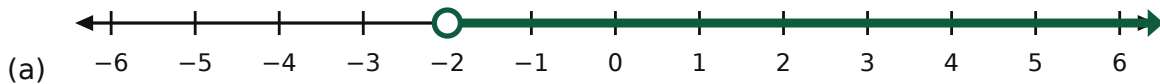
13. Solve $2x - 1 \geq 5$, then show your answer on the number line.

[3]



14. Write the inequality shown on each number line.

[2]



Section C: Real-life problems

9 marks

15. A bus can carry at most 60 passengers. There are 14 passengers on board. Let p be the number of passengers who can still get on. Write an inequality and solve it. What is the greatest number of passengers who can still get on? [3]

16. Wanjiru has Sh 500. An exercise book costs Sh 45. Let b be the number of books she buys. Write an inequality and solve it. What is the greatest number of books she can buy? [3]

17. A teacher has 240 pencils to share equally among learners. Each learner must get at least 6 pencils. Let x be the number of learners. Write an inequality and solve it. What is the greatest number of learners who can share the pencils? [3]

Section D: Challenge

4 marks

18. Find the greatest integer value of x that satisfies $3x - 7 < 11$. [2]

19. Find the smallest integer value of x that satisfies $5 - 2x < 3$. [2]