

Name:	Target Grade:	Actual Grade:
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## LINEAR INEQUALITIES

### READ THESE INSTRUCTIONS FIRST

#### INSTRUCTIONS TO CANDIDATES

1. Find a quiet, comfortable spot free place from distractions.
2. Spend one minute on each mark.
3. Time yourself for every single question.
4. Every chapter has their own question types. Ensure that you know the different question type for each chapter.
5. Make a conscientious effort to remember your mistakes, especially in terms of answering techniques. E.g Take a picture for the mistakes that you made, keep it in a photo album, and revise it over and over again.
6. Highlight question types that you tend to keep making mistakes and review them nearing exams.
7. Always review the common questions and question type that you tend to make mistakes nearing exams.
8. During exams, classify the question type and recall what you have learnt, how you need to analyse the questions for the different question type, what you need to take note of and answer with the correct answering techniques!

✨ Wishing you all the best for this test!

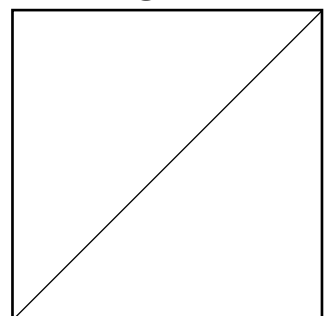
You've got this!

💡 With lots of love,  
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If you are struggling in this paper, means you need to work harder!

If you need any professional guidance and further advice on how to advance, feel free to WhatsApp us at 91870820 or find us at [www.bright-culture.com/](http://www.bright-culture.com/). We are committed to connect you to your future to reach your goals.

**MARKS**



## CHAPTER 2: LINEAR INEQUALITIES

- 1 (a) Solve the inequalities  $2 \leq 3x + 2 < 17$ .

*Answer* \_\_\_\_\_ [2]

- (b) List all the prime numbers such that  $2 \leq 3x + 2 < 17$ .

*Answer* \_\_\_\_\_ [1]

- 2 Solve the inequalities  $\frac{5}{3}p \leq 2p - 1 < 10$ .

*Answer* ..... [2]

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3 (a) Solve the inequalities  $x - 9 \leq 3x - 2 < \frac{2}{3}x + 5$ .

*Answer*  $x = \dots\dots\dots$  [2]

(b) Represent your answer to **part (a)** on the number line below.



[1]

4 Find the difference between the greatest and the least integer values of  $x$  that satisfies

$$-4 \leq \frac{x-3}{4} - \frac{x+2}{3} < 2.$$

*Answer*  $\dots\dots\dots$  [3]

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5 Solve the inequality  $-\frac{3x-4}{3} < \frac{7x-2}{6} \leq \frac{3x+4}{5}$

*Answer* ..... [3]

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**ANSWERS**

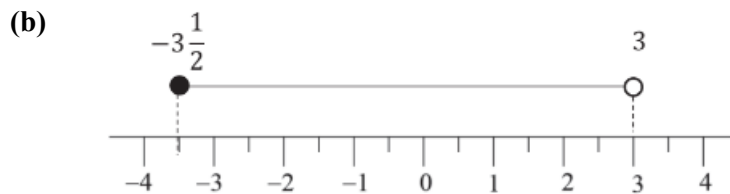
1 (a)  $2 \leq 3x+2$  and  $3x+2 < 17$   
 $0 \leq x$  and  $x < 5$  — [1]  
 $0 \leq x < 5$  — [1]

(b) 2, 3 — [1]

2  $3 \leq p \leq 5.5$

3 (a)  $x-9 \leq 3x-2$  and  $3x-2 < \frac{2}{3}x+5$

$$\begin{array}{ll} x-9 \leq 3x-2 & 3x-2 < \frac{2}{3}x+5 \\ -2x \leq 7 & 2\frac{1}{3}x < 7 \\ x \geq -3\frac{1}{2} & x < 3 \end{array}$$



4

$$\begin{array}{l} -4 \leq \frac{x-3}{4} - \frac{x+2}{3} < 2 \\ -48 \leq 3x-9-4x-8 < 24 \quad \text{M1} \\ -48 \leq -x-17 < 24 \\ -31 \leq -x < 41 \\ -41 < x \leq 31 \quad \text{M1} \end{array}$$

Alternative method:

$$\begin{array}{ll} -4 \leq \frac{x-3}{4} - \frac{x+2}{3} & \text{and} \quad \frac{x-3}{4} - \frac{x+2}{3} < 2 \quad \text{M1} \\ -48 \leq 3x-9-4x-8 & 3x-9-4x-8 < 24 \\ -48 \leq -x-17 & x > -41 \\ x \leq 31 & \\ \therefore -41 < x \leq 31 & \text{M1} \end{array}$$

$$\begin{array}{l} \text{Difference} = 31 - (-40) \\ = 31 + 40 \\ = 71 \quad \text{A1} \end{array}$$

5

$$-\frac{3x-4}{3} < \frac{7x-2}{6}$$

$$-18x+24 < 21x-6$$

$$30 < 39x$$

$$\frac{10}{13} < x$$

and

$$\frac{7x-2}{6} \leq \frac{3x+4}{5}$$

$$35x-10 \leq 18x+24$$

$$17x \leq 34$$

$$x \leq 2$$

$$\frac{10}{13} < x \leq 2$$

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