2.18 Inequalities and Number Lines: 10-minute Pack

Calculators not allowed · about 10 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Solve the inequality and give the answer in simplest form: $-3x \leq 12$.

(2)

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2 Solve the inequality $2x + 5 \leq 2x + 9$. State any special conclusion.

(2)

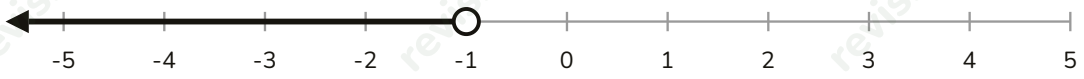
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3 Stretch: Solve the inequality and give the answer in inequality form: $2(3x - 1) \leq 5x + 7$. Show working.

(3)

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4 Write down the inequality shown on the number line. An open circle at -1 and arrow to the left.



(2)

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Mark scheme · 2.18 Inequalities and Number Lines: 10-minute Pack

Question 1

divides both sides by -3 and reverses inequality sign: x ≥ -4	**M1**
x ≥ -4 cao	**A1**

Answer: **x ≥ -4**

Question 2

subtracts 2x from both sides and simplifies: 5 ≤ 9	**M1**
5 ≤ 9 is true so all real numbers satisfy the inequality, answer: all real x or (-infinity, infinity) cao	**A1**

Answer: **All real numbers**

Question 3

expand left side or apply distributive law: 6x - 2 ≤ 5x + 7 or equivalent rearrangement	**M1**
collect x terms and simplify: 6x - 5x ≤ 7 + 2 leading to x ≤ 9	**M1**
x ≤ 9 cao	**A1**

Answer: **x ≤ 9**

Question 4

identifies < relation and correct variable form such as x < -1	**M1**
x < -1 cao	**A1**

Answer: **x < -1**

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