Test - Linear equations and inequalities

Year: Year 10 · Duration: 45 minutes · /20

Name:	Date:	**Mark: /20**

Question	1	2	3	4	5	Total
marks	4	4	4	4	4	**20**
Mark						

Show your working.

Question 1 (4 marks)

Question 1 – Solving equations

Non-calculator.

a. Solve $5x + 8 = 3x + 20$. (2 marks)
b. Solve $\dfrac{3x - 2}{4} = 5$. (2 marks)

Question 2 (4 marks)

Question 2 – Forming and solving

Calculator allowed. A plumber charges £45 call-out plus £28 per hour. Another plumber charges £20 call-out plus £33 per hour.

a. Show that the two plumbers charge the same for 5 hours. (2 marks)
b. Form an inequality and find when the first plumber is cheaper. (2 marks)

Question 3 (4 marks)

Question 3 – Inequalities

Non-calculator.

a. Solve $4x - 7 \leq 13$. (2 marks)
b. Solve $-5 < 3x + 1 < 10$ and write down all the integer solutions. (2 marks)

Question 4 (4 marks)

Question 4 – Problem: inequality

A hall hire costs £80 plus £6 per guest. A party has a budget of £350.

a. Write an inequality for the number of guests g. (1 mark)

b. Solve it. (2 marks)
c. What is the greatest number of guests? (1 mark)

Question 5 (4 marks)

Question 5 – Higher: quadratic inequality

Higher tier.

a. Solve $x^2 - 3x - 10 < 0$. (3 marks)
b. Write down the integer values of x that satisfy it. (1 mark)