Test - Straight-line graphs

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 – Gradient and equation

Calculator allowed.

a. Find the gradient of the line through $(1, 4)$ and $(5, 16)$. (2 marks)
b. Find the equation of this line. (2 marks)

Question 2 (4 marks)

Question 2 – Points and lines

A line has equation $y = 3x - 2$.

a. Does the point $(4, 10)$ lie on the line? Show your working. (1 mark)
b. Write down the equation of a line parallel to this line passing through $(0, 5)$. (1 mark)
c. Find where the line crosses the x-axis. (2 marks)

Question 3 (4 marks)

Question 3 – Midpoint and length

A is $(-2, 1)$ and B is $(6, 7)$.

a. Find the midpoint of AB. (2 marks)
b. Find the length of AB. (2 marks)

Question 4 (4 marks)

Question 4 – Problem: the gas bill

A gas company charges a standing charge plus a price per unit. For 200 units the bill is £48 and for 500 units the bill is £93.

a. Find the price per unit, the gradient of the line. (2 marks)
b. Find the standing charge. (1 mark)
c. Find the bill for 350 units. (1 mark)

Question 5 (4 marks)

Question 5 – Higher: perpendicular lines

Higher tier. Line L has equation $y = \frac{1}{2}x + 3$.

a. Write down the gradient of a line perpendicular to L. (1 mark)
b. Find the equation of the line perpendicular to L through $(2, 7)$. (3 marks)