EQUATION OF A LINE

Answer all of these questions. Remember to show your working out in all questions.

MAIN QUESTIONS

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1. 2, (1, 3) | $y = 2x + 1$

2. 3, (0, 4) | $y = 3x + 4$

3. 1, (2, 2) | $y = x$

4. 4, (1, 5) | $y = 4x + 1$

5. -1, (3, 2) | $y = -x + 5$

6. 0, (5, 3) | $y = 3$

7. -3, (1, 4) | $y = -3x + 7$

8. 2, (-1, 3) | $y = 2x + 5$

9. -2, (-3, 1) | $y = -2x - 5$

10. 5, (-2, -1) | $y = 5x + 9$

11. $\frac{1}{2}$, (4, 3) | $y = \frac{1}{2}x + 1$

12. $\frac{3}{4}$, (8, 2) | $y = \frac{3}{4}x - 4$

13. $-\frac{1}{3}$, (6, 3) | $y = -\frac{1}{3}x + 5$

14. $\frac{2}{5}$, (5, 1) | $y = \frac{2}{5}x - 1$

15. $-\frac{3}{2}$, (4, -2) | $y = -\frac{3}{2}x + 4$

16. $\frac{1}{3}$, $(\frac{1}{2}, 1)$ | $y = \frac{1}{3}x + \frac{5}{6}$

17. $\frac{2}{7}$, $(\frac{3}{4}, \frac{1}{2})$ | $y = \frac{2}{7}x + \frac{2}{7}$

18. $-\frac{5}{2}$, $(-\frac{1}{2}, \frac{3}{4})$ | $y = -\frac{5}{2}x - \frac{1}{2}$

19. $\frac{3}{5}$, $(\frac{2}{3}, \frac{4}{5})$ | $y = \frac{3}{5}x + \frac{2}{5}$

20. $\frac{5}{3}$, $(\frac{7}{3}, 2)$ | $y = \frac{5}{3}x - \frac{17}{9}$

MASTER QUESTIONS

M1. A straight line has gradient 4 and passes through (1, 5). Write its equation. | $y = 4x + 1$

M2. Find the equation of a line with gradient -3 passing through (2, 4). | $y = -3x + 10$

M3. The gradient of a line is 0 and it passes through (5, 7). What is its equation? | $y = 7$

M4. A line has gradient $\frac{1}{2}$ and passes through (4, 5). Find its equation. | $y = \frac{1}{2}x + 3$

M5. A hill has gradient $\frac{1}{5}$ and passes through (10, 20) on a map. Write the equation for height y against horizontal distance x. | $y = \frac{1}{5}x + 18$

M6. A car travels at 50 mph. After 2 hours it has covered 100 miles. Write an equation for distance d against time t. | $d = 50t$

M7. A taxi charges £2.50 per mile plus a fee. At 4 miles the cost is £13.00. Write an equation for cost C against miles m.

$C = 2.5m + 3$

M8. A line passes through (3, -1) with gradient -2. Find its equation.

$y = -2x + 5$

M9. A solution's temperature rises at 1.2°C/min. At 5 minutes it is 20°C. Write an equation for temperature T against time t.

$T = 1.2t + 14$

M10. A line has gradient $\frac{4}{5}$ and passes through the origin. Write its equation.

$y = \frac{4}{5}x$