

Equation of a Straight Line Exam Practice



Q1. Find an equation of the line which passes through the point P where $P = (0, 5)$ and is parallel to the line $y = -3x - 8$

Answer: _____
(2 marks)

Q2. Find an equation of the line which passes through the point P where $P = (0, -3)$ and is perpendicular to the line $y = 3x + 2$

Answer: _____
(2 marks)



Q3. Find an equation of the line which passes through the point (2, -1) and is parallel to the line $y = \frac{1}{2}x - 4$

Answer: _____
(2 marks)

Q4. Find an equation of the line which passes through the point (0, -3) and is perpendicular to the line $y = -\frac{3}{4}x + 2$

Answer: _____
(2 marks)



Q5. Line L passes through the points $A = (2, 5)$, $B = (5, 17)$. Find the equation of the line M which is perpendicular to line L and passes through point B .

Answer: _____
(3 marks)

Q6. Line M passes through the points $A = (6, 5)$, $B = (10, 3)$. Find the equation of the line N which is parallel to line M and passes through the point $(-7, 4)$.

Answer: _____
(3 marks)



Q7. Line L has equation $y = 2 - \frac{1}{4}x$ and line M has equation $y = 4x - 6$.
Show that the two lines are perpendicular to each other.

Answer: _____
(2 marks)

Q8. Line L has equation $8x - 4y - 3 = 0$ and line M has equation $2y - 9 = x$. Decide if L and M are perpendicular to each other.
You must show all your working.

Answer: _____
(3 marks)



Q9. Decide which two of these lines are parallel to each other:

1. $3x + 9 = 12y$

2. $y = 5$

3. $4y - 16x + 9 = 0$

4. $8y - 2x = 10$

5. $0 = 15 - 4y - 2x$

Answer: _____
(2 marks)

Q10. The line which passes through (a, 3) and (5, 11) is parallel to the line which passes through (4, 7) and (14, 12). Find the value of a.

Answer: _____
(3 marks)



Q11. State the equation of a line which is perpendicular to the line $y = 2$

Answer: _____
(1 mark)

Q12. Decide which two of these lines are perpendicular to each other:

1. $y - 3x + 9 = 0$
2. $3x - 5y + 1 = 0$
3. $-2x + y = 11$
4. $4y - 2x + 9 = 0$
5. $3y = 19 - 5x$

Answer: _____
(3 marks)



Q13. The line which passes through $(a, -4)$ and $(9, -6)$ is perpendicular to the line which passes through $(12, 19)$ and $(15, 13)$. Find the value of a .

Answer: _____
(3 marks)



Q14. A line has equation $y = 2x + 3$. Let P be the point $(4, 16)$ and point Q be the closest point to P which lies on the line. Find the co-ordinates of Q.

Answer: _____
(6 marks)