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| Year 10 | | *Linear Relations* | Non Calculator |
| **Skills and Knowledge Assessed:**   * Sketch linear graphs using the coordinates of two points and solve linear equations (ACMNA215) * Solve problems involving parallel and perpendicular lines (ACMNA238) | | | Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Section 1Short Answer Section | | | |
| Write all working and answers in the spaces provided on this test paper. | | | |
|  | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | 1 | 2 | 3 | 4 | |  |  | 8 |  | 20 | | | |
|  | The line *l* is shown on the number plane to the right.  The equation of the line *l*, is:  …………………………………………  ………………………………………….  ………………………………………… | | |
|  | What is the equation of the line shown?  …………………………………………  ………………………………………….  ………………………………………… | | |
|  | ……………………………………………………………………………………………………………  …………………………………………………………………………………………………………… | | |
|  | A line on the number plane has a gradient of 5 and crosses the *y* axis at *y* = -3.  What is the equation of the line?  ……………………………………………………………………………………………………………  …………………………………………………………………………………………………………… | | |
|  | What is the equation of the line shown?  .....................................................................  .....................................................................  ..................................................................... | | |
|  | The points (0, 3) and (3, 6) lie on a line l.  What is the equation of the line l ?  .....................................................................  .....................................................................  .....................................................................  ..................................................................... | | |
|  | The points (0, 3) and (3, 6) lie on a line q.  What is the equation of the line q?  .....................................................................  .....................................................................  .....................................................................  ..................................................................... | | |
|  | On a number plane, the straight line *p*, has a gradient of 5 and passes through the point (3, 9).  What is the equation of the line?  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | The line l is shown on the number plane to the right.  The equation of the line *l*, is:  …………………………………………  ………………………………………….  ………………………………………… | | |
|  | On a number plane, the straight line *p*, has a gradient of -4 and passes through the point (1, -6).  What is the equation of the line?  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | A straight line on a number plane has an equation of  What is the gradient of the line?  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | A line crosses the *x* axis at (-2, 0) and the *y* axis at (0, 6)  What is the equation of the line?  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | A line on the Cartesian plane is parallel to the line  and passes through the point  What is the equation of the line?  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | t are perpendicular and intersect at the point (-2, 5).  Find the equation of the line t.  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |

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| Year 10 | | *Linear Relations* | Calculator Allowed |
| Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Section 2Multiple Choice Section | | | |
| Mark all your answers on the accompanying multiple choice answer sheet, not on this test paper. You may do any working out on this test paper. Calculators are allowed for this section. | | | |
|  | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | 0 | 1 | 2 | 3 | |  | 5 | 8 | 10 | 14 |   A. 5 B. 8 C. 10 D. 14 | | |
|  | A line has an equation: .  What is its gradient?  A. -5 B.  C.  D. 2 | | |
|  | A line has a gradient of  and passes through the point  on the *y* axis.  What is its equation?  A.  B.  C.  D. | | |
|  | The equation of the line shown is:  A.  B.  C.  D. | | |
|  | 1. B.   C. D. | | |
|  | A line has a gradient of 3 and passes through the point  . What is its equation?  A.  B.  C.  D. | | |
|  | A line has an equation .  Which point lies on the line?  A. (-2, -7) B. (-2, -3) C. (-1, -9) D. (-1, 5) | | |
|  | Which is the graph of the line  ?    A. B.  C. D. | | |
|  | A line has equation Which statement is true?   1. Its gradient is  and its *y* intercept is .   B. Its gradient is  and its *y* intercept is 9.  C. Its gradient is  and its *y* intercept is .  D. Its gradient is  and its *y* intercept is 9. | | |
|  | The points  and *B*  lie on a line *l*.  The equation of the line *l* , is:  A.  B.  C.  D. | | |
|  | A line has equation Which statement is true?  A. Its gradient is  and its  intercept is .  B. Its gradient is  and its  intercept is 3.  C. Its gradient is  and its  intercept is .  D. Its gradient is  and its  intercept is 3. | | |
|  | The points *A* (3, 5) and *B*  lie on a line *l*.  The equation of the line *l* , is:  A.  B.  C.  D. | | |
|  | Line *p* has equation  and line *q* has equation  Which statement is true?   1. Line *p* is parallel to line *q*. 2. Line *p* is perpendicular to line *q*. 3. The lines are neither parallel nor perpendicular. 4. The lines are both parallel and perpendicular. | | |
|  | Which line is parallel to  A.  B.  C.  D. | | |
|  | The line *t* is perpendicular to the line *s*, which has equation *y*=3*x*.  The lines intersect at (2, 6)  What is the equation of the line *t*?  A.  B.  C.  D. | | |

# Linear Relations

# Multiple Choice Answer Sheet

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Completely fill the response oval representing the most correct answer.

1. A B C D

2. A B C D

3. A B C D

4. A B C D

5. A B C D

6. A B C D

7. A B C D

8. A B C D

9. A B C D

10. A B C D

11. A B C D

12. A B C D

13. A B C D

14. A B C D

15. A B C D

*Linear Relations*

# ANSWERS

|  |  |
| --- | --- |
| Section 1 ( 1 mark each) | |
|  | Working and Answers |
|  | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | 1 | 2 | 3 | 4 | |  | **2** | 8 | **14** | 20 | |
|  |  |
|  |  |
|  |  |
|  | gradient = 5  *y* intercept *y* = -3. |
|  | gradient =  *y* intercept *y* = 1. |
|  | gradient =  *y* intercept *y* = 3. |
|  | gradient = |
|  | gradient =5 |
|  | gradient =  Y int = 12 |
|  | gradient = |
|  |  |
|  | gradient =  Y int = 6 |
|  | Gradient = 6 |
|  |  |

|  |  |  |
| --- | --- | --- |
| Section 2 (1 mark each) | | |
|  | Working | Answers |
|  |  | C |
|  | Gradient = 2 | D |
|  | Gradient = -4 and y int = -9 so | C |
|  | gradient =  *y* intercept *y* = -3. | B |
|  | Gradient = 2 and y int = 4 which is graph A. | A |
|  | gradient = 3. | D |
|  |  | B |
|  | Graph C | C |
|  | Its gradient is  and its *y* intercept is 9. | A |
|  | gradient = | B |
|  |  | B |
|  | gradient = | A |
|  | Lines are parallel. | A |
|  | Parallel to line D | D |
|  | Passes through (2, 6)  Equation | C |

# Linear Relations

# Multiple Choice Answer Sheet

Name \_\_\_ Marking Sheet

Completely fill the response oval representing the most correct answer.

1. A B C D

2. A B C D

3. A B C D

4. A B C D

5. A B C D

6. A B C D

7. A B C D

8. A B C D

9. A B C D

10. A B C D

11. A B C D

12. A B C D

13. A B C D

14. A B C D

15. A B C D