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| Year 9 | | *Coordinate Geometry* | Non Calculator |
| **Skills and Knowledge Assessed:**   * Find the distance between two points located on a Cartesian plane using a range of strategies, including   graphing software (ACMNA214)   * Find the midpoint and gradient of a line segment (interval) on the Cartesian plane using a range of strategies, including graphing software (ACMNA294) | | | Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Section 1Short Answer Section | | | |
| Write all working and answers in the spaces provided on this test paper. | | | |
|  | Question 1 – 5 refer to the number plane shown. | | |
|  | Plot and label the points on the number plane above. | | |
|  | What are the coordinates of the points *D* and *E*?  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | The point *C* is the fourth vertex of a parallelogram *CDEF*. Draw the parallelogram and write down the coordinates of *C.*  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | What is the midpoint of the interval *DE* ?  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | What is the gradient of the interval *DF* ?  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | What is the length of the interval *DE* ?  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | ABCD is a kite.  The coordinates of A and B are given.  What are the coordinates of the points C and D ?  .....................................................................    .....................................................................  ..................................................................... | | |
|  | What is the gradient of the line joining  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | What is the length of the interval joining  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | What is the midpoint of the interval joining  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | What is the gradient of the line shown?  …………………………………………  ………………………………………….  …………………………………………  …………………………………………. | | |
|  | What is the value of *a*?  ……………………………………………………………………………………………….  ………………………………………………………………………………………………. | | |
|  | Find the area of the triangle *ABC.*    ……………………………………………  ……………………………………………  ……………………………………………  …………………………………………… | | |
|  | Questions 14 and 15 refer to the diagram below.  A circle is drawn on the number plane with its centre at the point C (1, -2). The point P (-5, 6) lies on the circle. | | |
|  | What is the length of the diameter *PQ* of the circle?  ………………………………………………………………………………………….  …………………………………………………………………………………………. | | |
|  | What are the coordinates of the point *Q*?  ………………………………………………………………………………………….  …………………………………………………………………………………………. | | |

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| Year 9 | | *Coordinate Geometry* | 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. | | | |
|  | Which of the points, A, B, C or D could have coordinates (0, -5)? | | |
|  | The point (-5, 6) lies in the:  A. first quadrant. B. second quadrant.  C. third quadrant D. fourth quadrant. | | |
|  | What is the midpoint of the interval joining (2, 3) and ( 4, 9)?  A. (3, 6) B. (6, 6) C. (3, 12) D. (6, 12) | | |
|  | What is the gradient of the line EF?  A.  B.  C.  D. | | |
|  | What is the distance between the points *C*(1, 5) and *D*(-4, -7).  A. 5 cm  B. 12 cm  C. 13 cm  D. 17 cm | | |
|  | Questions 6 – 8 refer to the number plane shown. | | |
|  | Find the midpoint of the interval *AB*.  A. (-1, -1) B. (1, 0) C. (1, 1) D. (2, 0) | | |
|  | What is the gradient of the interval *AB*?  A.  B.  C.  D. | | |
|  | What is the length of the interval *AB*?  A.  units B.  units C. 10 units D. 14 units | | |
|  | Find the gradient of the interval joining *E*(6, -7) and *F*(-3, 2).  A.  B.  C.  D. | | |
|  | Find the length of the interval joining *G*(-2, 4) and *H*(-5, -2).  A. 3 units B.  units C.  units D. 9 units | | |
|  | The gradient of the line shown is :  A.  B.  C.  D. | | |
|  | *M* (-1, 1) is the midpoint of the interval *DE*.  D has coordinates (2, 4).  What are the coordinates of E?  A.    B.    C.  D. | | |
|  | The distance *ST* is 15 units, and the point S has coordinates (12, -5).  Which of the following could be the coordinates of *T*?  A.  B.  C.  D. | | |
|  | The interval *EF* has a gradient of  If E is the point (3,  ), which of the following could be the coordinates of *F*?  A.  B.  C.  D. | | |

# Coordinate Geometry

# 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

*Coordinate Geometry*

# ANSWERS

|  |  |
| --- | --- |
| Section 1 ( 1 mark each) | |
|  | Working and Answers |
|  | See graph in Q 3. |
|  | D is (2,6) and E is (-6, 0). |
|  | C is (5, 2). |
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|  |  |
|  |  |
|  | Diagonals intersect at right angles, so C has same x value as A and is 6 units below B so is **C(1, -4)**  and D has same y value as B and is 3 units left of A so is **D is (-2, 2)** |
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|  |  |
|  | Base runs vertically from (-3, 4) and (-3, -2) which is 6 units.  Perp height runs horizontally from *x* = -3 to *x* = 4 which is 7 units. |
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|  | The centre is the midpoint of the diameter. |

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| Section 2 (1 mark each) | | |
|  | Working | Answers |
|  | A is (0,-5) | A |
|  | 2nd quadrant | B |
|  |  | A |
|  |  | D |
|  |  | C |
|  |  | B |
|  |  | D |
|  |  | C |
|  |  | A |
|  |  | C |
|  |  | A |
|  |  | B |
|  |  | C |
|  | Let F be (*x, y*) | D |

# Coordinate Geometry

# 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