**YEAR 11 Assessment Review Homework covering TEST 5 Non-calculator ENHANCED**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Common Graphs** | **/15** | **Inequalities** | **/12** | **Loci Vectors** | **/15** | **Algebraic**  **fractions** | **/20** |

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| --- | --- | --- |
|  | **Algebra: Graphs** |  |
| **1.**  **S** | Sketch the graph of   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | a) |  | b) |  | c) |  | | **(3)** |
| **2.**  **S** | 1. Which is the correct equation for the graph shown below.  |  |  |  |  | | --- | --- | --- | --- | | ***y =* cos *x*** | ***y* = sin *x*** | ***y* = 2*x*** | ***y* = tan *x*** |  |  |  |  |  | | --- | --- | --- | --- | |  | | | | |  |  |  |  |   b)     Which is the correct equation for the graph shown below.   |  |  |  |  | | --- | --- | --- | --- | | ***y =* cos *x*** | ***y* = sin *x*** | ***y* = 2*x*** | ***y* = tan *x*** |  |  | | --- | |  | | **(2)** |
| **3.**  **F** | |  |  |  | | --- | --- | --- | | A | B | C |   Match up the graph with the correct equation   |  |  |  | | --- | --- | --- | | *y* − 7 = *x*2 + 8*x* | *y* + *x*2 = 7*x* - 10 | *y* + 18 = *x*2  + 3*x* | | **(3)** |
| **4.**  **F** | The diagram shows a sketch of the graph of    *y* = *x*2 + *ax* + *b*  The graph crosses the *x*-axis at (1, 0) and (6, 0).    (6, 0)  (1, 0)  Work out the values of a and *b*.  You **must** show your working. | **(3)** |
| **5.**  **M** | The diagram is a sketch of part of the graph of *y* = cos *x*°.  Work out the coordinates of  (i) *R,*  (ii) *S*  (iii) What is the value of cos 45?  (iv) What is the value of cos 225? | **(4)** |
|  | **TOTAL** | **15** |
|  |  |  |
|  | **Algebra: Inequalities** |  |
| **1.**  **S** | a) Solve        3 *x* − 9 ≤ 23  b)     The values    -3, -2, −1, 0, 1, and 2    satisfy **one** of the inequalities below.  Select the correct inequality.  −4 < 2*y* ≤ 4        −6 ≤  *2y* < 4         −9 ≤ 3*y* ≤ 6 | **(1)**  **(1)** |
| **2.**  **F** | Work out **all** the integers that satisfy the inequality  3 < 3n - 2 ≤ 17 | **(2)** |
| **3.**  **F** | Solve    3*x* − 7 ≤ 5*x* + 14 | **(2)** |
| **4.**  **F** | On a copy of the axes shown, draw lines to show the region satisfied by the three inequalities.   |  |  |  | | --- | --- | --- | | *y* | ≥ | 1 |  |  |  |  |  | | --- | --- | --- | --- | | *y* | ≤ | *6 -* | *x* |  |  |  |  | | --- | --- | --- | | *y* − *x* | ≤ | 4 |   Label the region clearly with the letter R | **(3)** |
| **5.**  **M** | Solve | **(3)** |
|  | **TOTAL** | **12** |
|  |  |  |
|  | **Geometry: Loci and Vectors** |  |
| **1.**  **S** | Use ruler and compasses to **construct** an angle of 30° | **(3)** |
| **2.**  **S** | **a** = and **b** =    a) Find the vector –**b**  b) Find the vector **b** – **a**  c) Find the vector 2**b** | **(3)** |
|  |  |  |
| **3.**  **F** | *OABC* is a parallelogram. *BCD* is a straight line. *BD* = 3*BC*.  *M* is the midpoint of *OC*.  a) Find, in terms of *x* and *y*,  (i)   (ii)  b) Use your answers to (a) (i) and (ii) to write down two different geometric  facts about the lines *AM* and *OD*. | **(2)**  **(2)** |
| **4.**  **M** | *OAB* is a triangle.  *P* is the point on *OA* such that  *OP* : *PA* = 2 : 1  *C* is the point such that *B*  is the midpoint of *OC*.  *M* is the midpoint of *AB*.    = 6**a**    = 4**b**  Show that *PMC* is a straight line. | **(5)** |
|  | **TOTAL** | **15** |
|  |  |  |
|  | **Algebra: Algebraic fractions** |  |
| **1.**  **S** | Simplify | **(3)** |
| **2.**  **S** | Write as a single fraction | **(3)** |
| **3.**  **F** | Express as a single fraction in its simplest form. | **(4)** |
| **4.**  **F** | Simplify fully | **(3)** |
| **5.**  **M** | Show that simplifies to *a*  where a is an integer. | **(3)** |
| **6.**  **M** | Write as a single fraction in its simplest form. | **(4)** |
|  | **TOTAL** | **20** |