**YEAR 11 TEST 6 Review Homework calculator allowed ENHANCED**

**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Answer sheet**

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|  | **Algebra: Tangents and Area** |  |
| **1.**  **M** | Here is a speed time graph for a train.    a)     Work out an estimate the distance travelled by the train in the first 20 seconds.  Use four strips of equal width.  ………………… m  b)     Is your answer to a) an over estimate of an under estimate of the actual distance travelled by the train?  Give a reason for your answer.  ……………………………………………………………………………………………………………………………………………………  …………………………………………………………………………………………………………………………………………………… | **(3)**  **(1)** |
| **2.**  **F** | A ball is thrown from a point 6 metres above the ground.  The graph shows the height of the ball above the ground, in metres.  Estimate the speed of the ball in m/s after 1 second.  You must show your working. | **(2)** |
|  | **Geometry: Transformations** |  |
| **1.**  **F** | Square *OABC* is drawn on a centimetre grid.  *O* is (0, 0)  *A* is (2, 0)  *B* is (2, 2)  *C* is (0, 2)    a)     *OABC* is translated by the vector  Circle the number of invariant points on the perimeter of the square.  0                           1                           2                           4  b)     *OABC* is enlarged, scale factor -1, centre (2, 2)  Circle the number of invariant points on the perimeter of the square.  0                           1                           2                           4  c)     *OABC* is reflected in the line *y* = 4 - *x*  Circle the number of invariant points on the perimeter of the square.  0                           1                           2                           4 | **(1)**  **(1)**  **(1)** |
| **2.**  **F** | Shape **P** is reflected in the line *y* = –1 to give shape **Q**.  Shape **Q** is reflected in the line *x* = 4 to give shape **R**.  Describe fully the **single** transformation that maps shape **P** onto shape **R**.  ……………………………………………………………………………………………………………………………………………………  …………………………………………………………………………………………………………………………………………………… | **(3)** |
| **3.**  **F** | This diadram shows triangles CDE and PQR.  CDE is mapped tp PQR by combining two single transformations.  The first is a rotation of 90° anticlockwise about E.  Describe the second transformation.    ……………………………………………………………………………………………………………………………………………………  …………………………………………………………………………………………………………………………………………………… | **(3)** |
| **4.**  **M** | Enlarge shape P by  scale factor - ½ with centre of enlargement (0,0) | **(3)** |
| **5.**  **M** | On the grid, enlarge the triangle by scale factor –1½, centre (2, 0) | **(3)** |