**END TERM 1-2023**

**MATHEMATICS PAPER 2 (121/2)**

**FORM FOUR**

**TIME: 2 ½ HOURS**

|  |  |  |  |
| --- | --- | --- | --- |
| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
|  | Capacity of container | M1  M1  A1 | Volume of container |
| **Total** | **3** |
|  | Last term | M1  M1  A1 | Expressions for and |
| **Total** | **3** |
|  |  | M1  M1  A1 | Removal of square root  Collection of terms in x  A0 if ± missing |
| **Total** | **3** |
|  |  | M1  A1 |  |
| **Total** | **2** |

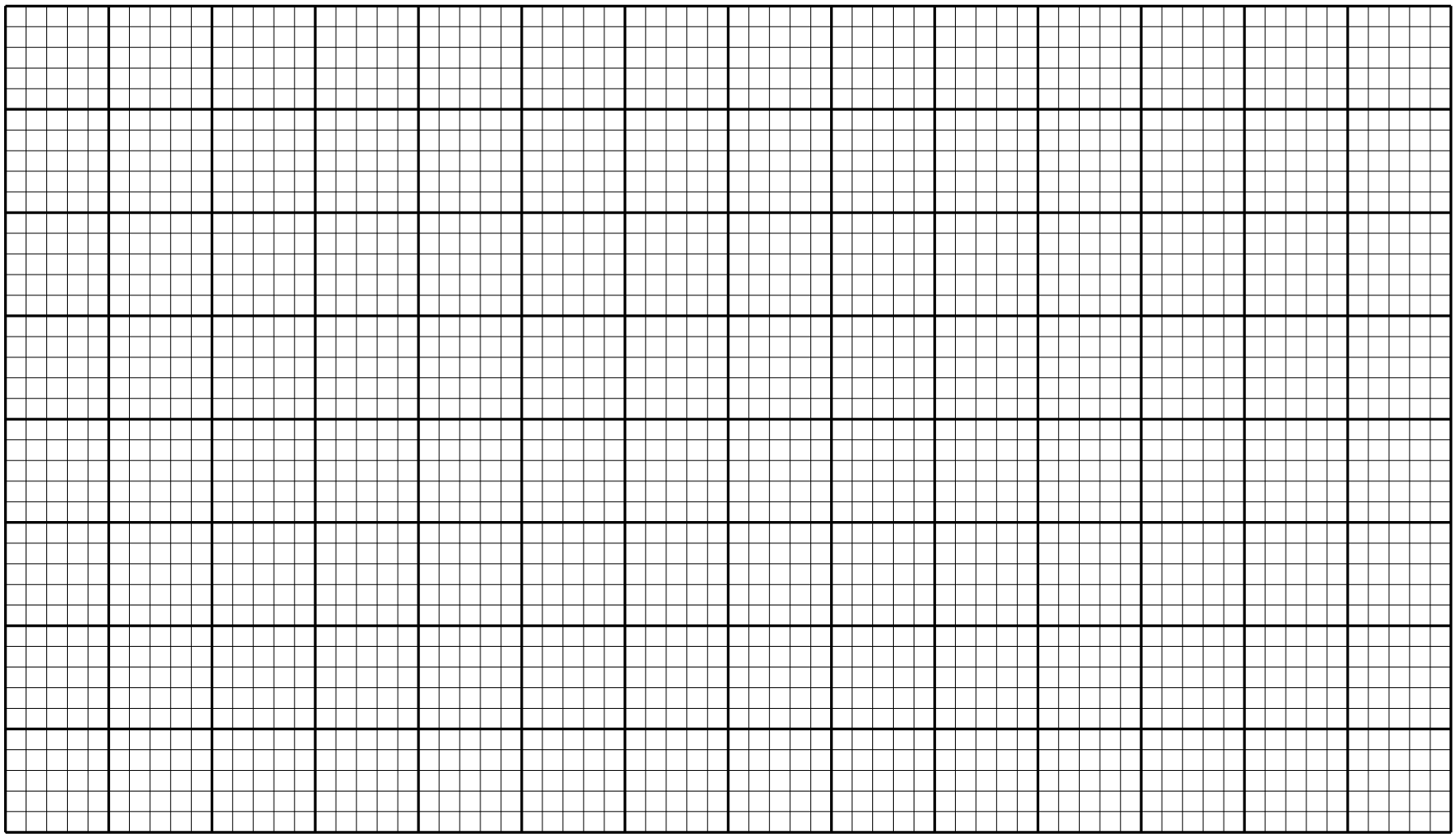
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| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
|  |  | B1  B1  M1  A1 | cm  ∠TOP |
| **Total** | **4** |
|  |  | M1  A1  M1  A1 |  |
| **Total** | **4** |
|  |  | M1  M1  A1 |  |
| **Total** | **3** |

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| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
|  | Amount borrowed  Total instalments  Let the rate of interest be per month | M1  M1  M1  A1 |  |
| **Total** | **3** |
|  | 1. Phase angle 2. Period | B1  B1 |  |
| **Total** | **3** |
|  | Hence | B1  B1  B1 |  |
| **Total** | **3** |
|  |  | P1  C1  M1  A1 |  |
| **Total** | **4** |

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| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
|  |  | M1  M1  A1 |  |
| **Total** | **3** |
|  |  | B1  B1  B1  B1 | Bisecting line AB  Arc radius 2 cm and centre C  Bisecting angle CDA  Locating and shading the region |
| **Total** | **4** |
|  |  | M1  M1  A1 | Absolute error in the perimeter  Expression for percentage error  Accept |
| **Total** | **3** |

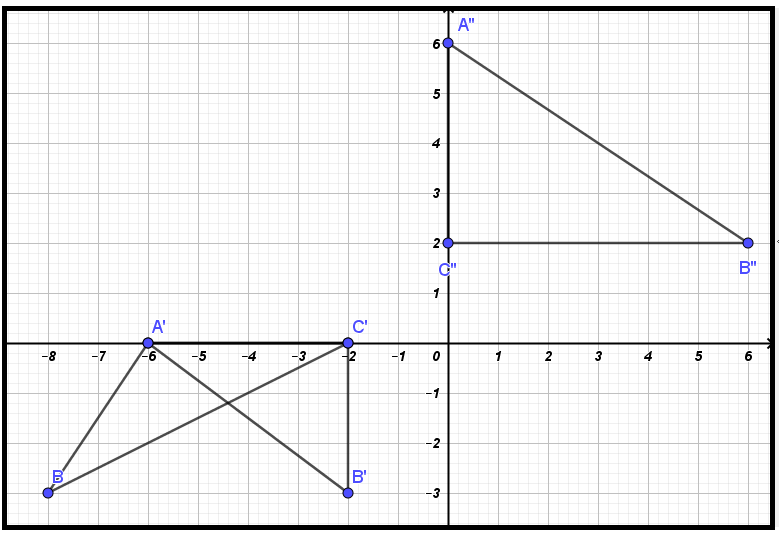
|  |  |  |  |
| --- | --- | --- | --- |
| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
|  | |  |  | | --- | --- | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | | M1  M1  M1  A1 | All logarithms 🗸  🗸 addition and subtraction of logarithms  🗸 multiplication of logarithms by 2 and division by 3  A0 if < 4 decimal places |
| **Total** | **4** |
|  |  | M1  M1  A1 |  |
| **Total** | **3** |

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| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
|  | 1. Table  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Height |  |  |  |  |  | | 3.0 – 3.9 | 3 | 3.45 |  |  |  | | 4.0 – 4.9 | 5 | 4.45 |  |  |  | | 5.0 – 5.9 | 7 | 5.45 |  |  |  | | 6.0 – 6.9 | 8 | 6.45 |  |  |  | | 7.0 – 7.9 | 5 | 7.45 |  |  |  | | 8.0 – 8.9 | 2 | 8.45 |  |  |  | |  | 30 |  |  |  |  |  1. Standard deviation 2. (i) Ogive     (ii) Range of height between the 20th and 80th percentiles  Range | B1  B1  B1  B1  M1  A1  B1  B1  B1  B1 | All 🗸  All 🗸  All 🗸  All 🗸  Axes  Curve  Identification of the percentiles from ogive |
|  | **Total** | **10** |  |



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| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
|  | 1. Taxable income 2. PAYE 3. Net Salary | M1  A1  M1  M1  M1  M1  A1  M1  M1  A1 | First 2 bands  Second 2 bands  Last band |
| **Total** | **10** |
|  | 1. (i)   (ii)     1. (i) Value of         Either (discriminate)  Or  (ii) Perimeter  Dimension metres by metres | M1  M1  A1  M1  M1  A1  B1  M1 |  |
| **Total** | **10** |

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| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
|  | 1. Coordinates of triangle   2b=6  Hence   1. (i) Triangles   (ii) Shear, invariant   1. (i) triangle drawn   (ii) Matrix  ,  Matrix= | M1  A1, B1  B1, B1  B1  B1  M1  M1  A1 |  |
| **Total** | **10** |



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| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
|  | 1. Table 2. Graphs      1. Using graphs to 2. find the values of for which: 3. determine the values of for which:   and | B2  P1  C1  P1  C1  L1  B1  B1  B1 | All values correct (B1 at least 5 values correct)  Line drawn  All values 🗸 |
| **Total** | **10** |

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| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
|  | 1. Awuor 2. Annual increment 3. Sum after 11 years 4. Wasonga | M1  M1  A1  M1  M1  A1  M1  A1  M1  A1 |  |
| **Total** | **10** |

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| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
|  | 1. DG and ABCD   Consider ΔGKD   1. ABGH and ABCD   Consider ΔGKB   1. Volume | M1  M1  A1  M1  M1  A1  M1  A1  M1, A1 |  |
| **Total** | **10** |

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| **NO.** | **WORKING** | **MARKS** | **REMARKS** |
|  | Either or   1. Area by trapezium rule  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  | |  |  |  |  |  |  |   Shaded area   1. Area by integration | M1  A1  M1  M1  M1, A1  M1  M1  M1  A1 |  |
| **Total** | **10** |