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|  | S5 B Test, June 2024  Teachers : S. ANGELOZI, S. KWASNY, A. C. LENTI, H. PÁSZTOR, M. PÉREZ PÉREZ, S. F. SOLANDER, R. SOUISSI, L. WURZER. |

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|  | **MatHEMATICS 4 périodS**  **Part A** |  |

**Date :** 17 June 2024

Name : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Class : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Score : \_\_\_\_\_ / 35

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| **Duration of Test :**  45 minutes : 13h00 - 13h45  **AUTHORIZED MatériAl :**  NON-CaLCULATOR  Pencil  Ruler  **Special REmarks :** |  |

* The subject includes 4 compulsory exercises.
* The answers must be accompanied by the explanations necessary for their elaboration.
* Full points cannot be awarded for a correct answer in the absence of the reasoning and explanations that lead to this answer.

Stay calm and focused.

Good job and good luck.

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| **Exercice A1** | **Marks** |
| In a certain country the growth of a certain rabbit population (per week) can be modelled with the following function:  with describing the number of rabbits after weeks and being the time at the beginning of the observation of the rabbit population. |  |
| 1) **Give** the number of rabbits, that have been in the country at the beginning of the observation. | **1 p** |
| 2) **Calculate** how many rabbits will live in the country after 1 week and after 3 weeks and **compare** the values. | **4 p** |
| 3) **Sketch** the graph of the function for Use the sheet of graph paper you received at the beginning of the exam. | **2 p** |
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| **Exercice A2** | **Marks** |
| **Determine** real numbers for which the following equations are true: |  |
|  | **2 p** |
|  | **2 p** |
|  | **3 p** |
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| **Exercice A3** | **Marks** |
| Das Volumen (der Rauminhalt) der quadratischen Pyramide The figure shows a pyramid with a square base.  The base is and the height of the pyramid is . |  |
| 1) Given that the formula for the volume of a pyramid is  **calculate** the volume of this pyramid. | **2 p** |
| 2) **Calculate** the height of triangle BCS. | **2 p** |
| 3) **Calculate** the area of triangle BCS. | **2 p** |
| 4) **Calculate** the surface area of this pyramid. | **3 p** |
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| **Exercice A4** | **Marks** |
| 1) **Determine** what each angle in degrees is equivalent to in radians: | **3 p** |
| 1. 45° = \_\_\_\_\_\_\_\_rad 2. 150° = \_\_\_\_\_\_\_rad 3. 300° = \_\_\_\_\_\_\_\_rad |  |
| 2) **Determine** what each angle in radians is equivalent to in degrees:   1. rad= \_\_\_\_\_\_\_\_° 2. rad = \_\_\_\_\_\_\_\_° | **2 p** |
| Et billede, der indeholder cirkel, diagram, linje/række  Automatisk genereret beskrivelse3) **Insert** those 5 angles listed above on the unit circle | **2 p** |
| 4) Given is .  Based on this information **find** all the values of for which  **Enter** the answers in radians and **plot** it on the above unit circle. | 5 p |
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**END OF THE EXAMINATION**