Teachers : M. A. COSTA MOLINA, A. FIELDING,
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L. WURZER.

MATHEMATICS 4 PERIODS

PART A

DATE : 14 June 2023

Name : _____

Class : _____

Score : _____ / 20

DURATION OF TEST :

45 minutes : 8h30 - 9h15

AUTHORIZED MATERIAL :

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.
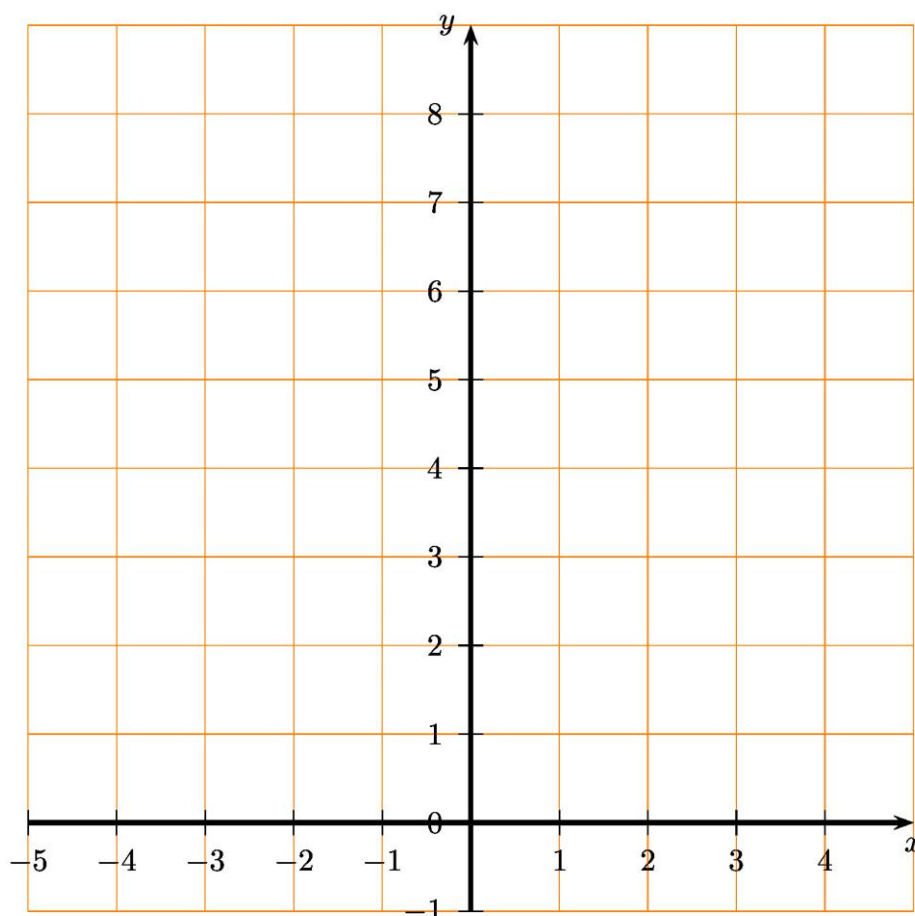
Stay calm and focused.
Good job and good luck.

Exercice A1	Marks

Let $f(x)$ be the function defined by $f(x) = 2^x$.

1) **Complete** the table of values below : · 2 points

x	-3	-2	-1	0	1	2	3
$f(x)$							

2) **Sketch** a graph of the function $f(x)$ below : · 2 points

3) **Discuss** if the function $f(x)$ is representing exponential growth or decay. **Justify**. · 1 point

Exercice A2	Marks
1) **Match** each angle in degrees (from a to e) to the corresponding angle in radians (from i to v) : a) 90° b) 30° c) 300° d) 270° e) 135° i) $\frac{5}{3}\pi$ ii) $\frac{1}{2}\pi$ iii) $\frac{3}{4}\pi$ iv) $\frac{1}{6}\pi$ v) $\frac{3}{2}\pi$ 2) **Place** these five angles on the Unit Circle below. 	2,5 points 2,5 points

Exercice A3	Marks
We have put together the December B tests in mathematics, for S5 pupils of EEB1. Among those tests, we look at the grades of 6 students. Their 6 marks were as follows: 5 ; 5 ; 6 ; 6 ; 6 ; 8	
1) **Calculate** the mean of these 6 marks.	1 point
2) **Check** that the standard deviation of these 6 marks is 1.	2 points
3) In another group of students, the mean is the same but the standard deviation is higher. **Interpret** this difference in terms of results of the two groups of students.	1 point
4) **Give** an example of a series of 6 marks with the same mean, but with a higher standard deviation.	1 point

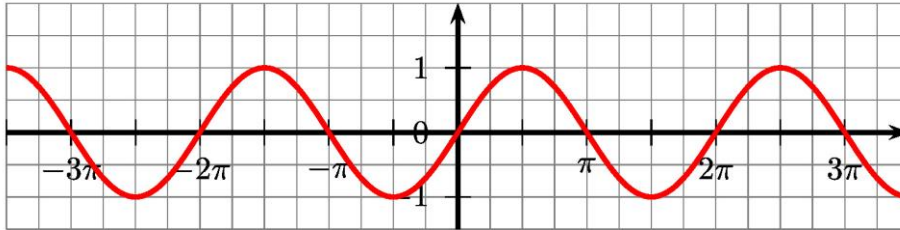| Exercice A4	Marks
1) **Associate** each function (from f to h) to the graph (from i to iii) :	3 points

$f(x) = sin(x)$ $\qquad\qquad$ $g(x) = cos(x)$ $\qquad\qquad$ $h(x) = tan(x)$
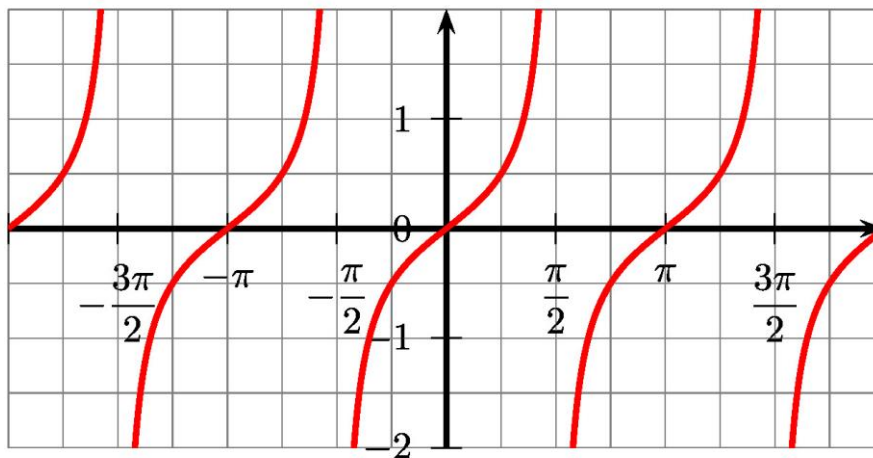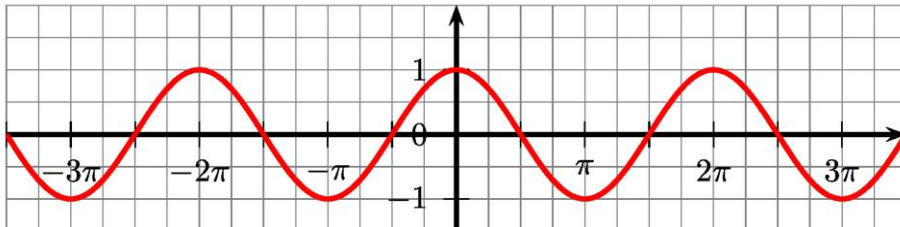
i)

ii)

iii)

| 2) **Give** the périod of the functions i) and ii). | 2 points |

END OF THE EXAMINATION