

Nom & Prénom : ……………………………………………………………………………………………….N° ………….

Exercice 1 :

Soit l’algorithme suivant :

0/DEF FN Traitement(x :réel ;y :entier) :réel

1/Res 🡸 1

 Pour i de 1 à y Faire

 Res 🡸 Res \* x

 Fin Pour

2/ Traitement 🡸 Res

3/ Fin Traitement

1. Quelle est la valeur retournée par la fonction **Traitement** pour **x = 2** et **y = 5**

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1. Quelle est la valeur retournée par la fonction **Traitement** pour **x = 3 et y = 4**

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1. Quel est le rôle de cette fonction

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Exercice 2 :

On désire calculer le sin(x) pour une valeur de x donnée (0<x<1) à l’ordre p sachant que :

$$\sin(\left(x\right)=x- \frac{x^{3}}{3!})+ \frac{x^{5}}{5!}-\frac{x^{7}}{7!}+…+(-1)^{p}\*\frac{x^{2p+1}}{\left(2p+1\right)!}$$

1. Analyser le problème en le décomposant en module et en déduire l’algorithme du programme principal
2. Analyser chacun des modules envisagés et en déduire les algorithmes correspondant

**Analyse du programme Principal** **Algorithme du programme principal** ..…………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

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**TDOG**

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| **Objet** | **Type/Nature** | **Rôle** |
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1 - x2/2! + x4/4! + ... + (-1)p x2p/(2p)! + o(x2p)