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[ MPSI 1

[ CPGE Agadir

[ TP 1 : Programmation

[ **Ecrire un programme qui donne tous les nombres premiers inferieurs a un entier donné, on pourra utiliser : [prevprime],[while]:**

```
[ > liste:=proc(n)
[ > a:=prevprime(n):
[ > list:=a:
[ > while a<>2 do
[ >             a:=prevprime(a):
[ >             list:=a,list:
[ > od:
[ > [list]:
[ > end:
Warning, `a` is implicitly declared local
Warning, `list` is implicitly declared local
```

```
[ > liste(150);
```

```
[ [2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97, 101,
[ 103, 107, 109, 113, 127, 131, 137, 139, 149]
```

[ **Ecrire un programme qui verifie si un nombre est premier , on pourra utiliser le crible d'Eratostène , le programme précédent, [irem],[op],[sqrt],[trunc],[from],[if],[break],[next]**

```
[ > test:=proc(n)
[ > A:=liste(trunc(sqrt(n)));
[ > for i from 1 to nops(A) do
[ >             a:=irem(n,op(i,A)):
[ >             if a<>0 then next
[ >             else break
[ >             fi:
[ > od:
[ > if i<nops(A) then print('n-non-premier'):
[ >     else print('n-premier'):
[ > fi:
[ > end:
```

```
Warning, `A` is implicitly declared local
Warning, `i` is implicitly declared local
Warning, `a` is implicitly declared local
```

```
[ > test(102);
```

```
102 – non – premier
```

```
[ > test(101);
```

```
101 – premier
```

```
[ >
```