```
> #Correction TP 2
> #EXO 1 :
> #Q.1
> somme := proc(n)
  local i, s,rem, quo;
  s:=0;
  quo:=n;
  rem:=irem(quo,10);
  while (quo>0) do
  s:=s+rem;
  quo:=iquo(quo,10);
  rem:=irem(quo,10);
  end do;
  return s;
  end proc;
```

somme := **proc**(*n*)

local *i*, *s*, *rem*, *quo*;

s := 0;

quo := *n*;

rem := irem(*quo*, 10);

while 0 < *quo* **do** *s* := *s* + *rem*; *quo* := iquo(*quo*, 10); *rem* := irem(*quo*, 10) **end do**;

return *s*

end proc

```
> somme(28);
```

10

```
> somme(245);
```

11

```
> somme(2)=somme(200);
```

2 = 2

```
> #Q. 3
> itereSomme := proc(n)
  local s;
  s:=somme(n);
  while(s>=10) do
  s:=somme(s);
  end do;
  return s;
  end proc;
```

itereSomme :=

proc(*n*) **local** *s*; *s* := somme(*n*); **while** 10 ≤ *s* **do** *s* := somme(*s*) **end do**; **return** *s* **end proc**

```
> itereSomme(28);
```

1

```
> itereSomme(200);
```

2

```
> itereSomme(245);
```

$$2$$

```
> #EXO 2 :
> #Q. 1
> facteurs:=proc(n)
  local L, quo, p;
  L:=[];
  quo:=n;
  p:=2;
  while(quo > 1) do
  if irem(quo,p)=0 then
  L:=[op(L),p];
  quo:=iquo(quo,p);
  else p:=nextprime(p);
  end if;
  end do;
  return L;
  end proc;
```

facteurs := **proc**(*n*)
local *L*, *quo*, *p*;
L := [ ];
quo := *n*;
p := 2;
while 1 < *quo* **do**
if irem(*quo*, *p*) = 0 **then** *L* := [op(*L*), *p*]; *quo* := iquo(*quo*, *p*)
else *p* := nextprime(*p*)
end if
end do;
return *L*
end proc

```
> facteurs(360);
```

$$[2, 2, 2, 3, 3, 5]$$

```
> facteurs(81);
```

$$[3, 3, 3, 3]$$

```
> facteurs(13);
```

$$[13]$$

```
> facteurs(1);
```

$$[\ ]$$

```
> facteurs(2);
```

$$[2]$$

```
> #EXO 3 :
> pgcd := proc(a,b)
```

```
  local r,i,j;
  i:=a;
  j:=b;
  r:=irem(i,j);
  while(r<>0) do
  i:=j;
  j:=r;
  r:=irem(i,j);
  end do;
  return j;
  end proc;
```

pgcd := **proc**(*a*, *b*)

local *r*, *i*, *j*;

i := *a*; *j* := *b*; *r* := irem(*i*, *j*); **while** *r* ≠ 0 **do** *i* := *j*; *j* := *r*; *r* := irem(*i*, *j*) **end do**; **return** *j*

end proc

```
> pgcd(16,15);
```

1

```
> pgcd(15,16);
```

1

```
> pgcd(48,4);
```

4

```
>
```