X-MP-PC-2013

```
> restart;
> admet_point_fixe:=proc(t)
  global n;
  local i;
  for i from 0 to n-1 do
       if t[i]=i then
            return vrai
       fi;
  od;
  return faux;
  end:
> n:=5:t:=array(0..4,[4,3,3,1,0]):
> admet_point_fixe(t);
```

faux

```
> est_croissante:=proc(t)
  global n;
  local i;
  for i from 0 to n-2 do
       if t[i+1]<t[i] then
            return faux
       fi;
  od;
  return vrai;
  end:
> n:=10:t:=array(0..9,[1,3,3,5,5,5,7,7,7,8]):t1:=array(0..9,[1,3,8
  ,5,5,5,7,7,7,8]):
> est_croissante(t);est_croissante(t1);
```

vrai

faux

```
> attire:=proc(t,i,j)
  global n;
  local j_itere,k;
  j_itere:=j;
  for k from 0 to n-1 do
       if j_itere=i then
            return vrai
       else
            j_itere:=t[j_itere]
       fi;
  od;
  return faux;
  end:
> n:=7:t:=array(0..6,[5,5,2,2,0,2,2]):
> seq(attire(t,2,j),j=0..6);
```

vrai, vrai, vrai, vrai, vrai, vrai, vrai

```
> est_attracteur:=proc(t,i)
  global n;
  local j;
  if t[i]<>i then
       return faux
  else
       for j from 0 to n-1 do
            if attire(t,i,j)=faux then
                 return faux
            fi;
       od;
  fi;
  return vrai;
  end:
```

```
> seq(est_attracteur(t,i),i=0..6);
```

faux, faux, vrai, faux, faux, faux, faux

```
> admet_attracteur_principal:=proc(t)
  global n;
  local i;
  for i from 0 to n-1 do
       if est_attracteur(t,i)=vrai then
            return vrai
       fi;
  od;
  return faux;
  end:
```

```
> admet_attracteur_principal(t);
```

vrai