```
program mhd;
{

Uloha celoslovenskeho kola sutaze Zenit v programovani
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1. Listok MHD ma tvar :      55   - cislo listka
                            . . .
                            . . .
                            . . .
   jednotlive bodky sa mozu predierkovat.

   Napiste program, ktory pre dane cislo  k  ( 0 < k < 10 )
   vypise vsetky rozlicne listky mestskej hromadnej dopravy
   s k dierkami a ocisluje ich. Pritom setri papierom a vypisuje
   m listkov do jedneho radu vedla seba. Dva listky su rozne, ak
   sa nedaju stotoznit ani otocenim okolo zvislej osy.

   }
   uses crt;
   type    listok = string[9];
   const   m      = 15;
           znaky_riadku   = 80;
           me = ''; mev = '  ';  des = 3;
           cisty  : listok = '.........';
           koniec : boolean = false;
           dierka : char = 'o';
           bodka  : char = '.';
var
           r      : array[1..m] of listok;
           pocet,pocet_v_riadku : integer;
           t      : text;
           d      : array[1..9] of integer;
           l      : listok;
           k      : integer;

function este_nebol:boolean;
var sym : listok;
begin
  if not koniec then
    begin
      sym:=cisty;
      sym[1]:=l[3];  sym[3]:=l[1];  sym[2]:=l[2];
      sym[4]:=l[6];  sym[6]:=l[4];  sym[5]:=l[5];
      sym[7]:=l[9];  sym[9]:=l[7];  sym[8]:=l[8];
      este_nebol:=l>=sym;
    end
  else este_nebol:=false;
end;

procedure priprava;
var  i : integer;
begin
  pocet:=1;  pocet_v_riadku:=1;
  assign(t,'t.t');  rewrite(t);
  repeat
    clrscr;
    write('kolko dierkove listky ? : ');  readln(k);
  until (k>0) and (k<9);
  l :=cisty;
  for i:=1 to k do begin d[i]:=i; l[i]:=dierka; end;
  r[1]:=l;
  writeln(t);
  writeln(t,'MHD pocet dierok = ',k);
end;
```

```
procedure generuj;
var i,pocet_dierok : integer;
begin
  if l[9]=dierka then
    begin
      i:=9;
      repeat l[i]:=bodka;
             i:=i-1;
      until  l[i]=bodka;
      pocet_dierok:=9-i;
      koniec:=(pocet_dierok=k);
      if not koniec then
        begin
          repeat i:=i-1  until l[i]=dierka;
          l[i]:=bodka;  l[i+1]:=dierka;
          for i:=i+2 to i+1+pocet_dierok do l[i]:=dierka;
        end;
    end
  else
    begin
      i:=9; repeat i:=i-1  until l[i]=dierka;
      l[i]:=bodka;  l[i+1]:=dierka;
    end;
  if este_nebol then
    begin
      pocet:=pocet+1; inc(pocet_v_riadku);
      r[pocet_v_riadku]:=l;
    end;
end;

procedure tlac_riadok(kolko:integer);
var i,j : integer;
begin
  writeln(t);
  for i:=1 to kolko do begin
    write(t,pocet-kolko+i:des,mev);
  end;
  writeln(t);
  for i:=1 to 3 do begin
    for j:=1 to kolko do begin
      write(t,r[j,i*3-2],r[j,3*i-1],me,r[j,i*3],me,mev);
    end;
    writeln(t);
  end;
  writeln(t);
end;

begin
  priprava;
  repeat
    generuj;
    if pocet_v_riadku = m then
      begin tlac_riadok(m); pocet_v_riadku:=0;
      end;
  until koniec;
  if pocet_v_riadku>0 then tlac_riadok(pocet_v_riadku);
  writeln(t);
  writeln(t,'pocet roznych listkov : ',pocet);
  close(t);
  repeat until readkey = #27;
end.
```

```
program mnozina;
{

Uloha celoslovenskeho kola sutaze Zenit v programovani
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             2. Mnozina M je dana nasledovne :
                1 . cislo 1 patri do M
                2. ak patri x do M, potom tam patria aj cisla 2x+1,3x+1,5x.
                3. ziadne ine cisla do M nepatria
                Vypiste pre dane n ( n <= 1000 ) n najmensich prvkov mnoziny
                vzostupne usporiadanych.


}
uses crt;
var
    a             : array[1..1003] of integer;
    n,p2,p3,p5,p  : integer;
    i,c2,c3,c5    : integer;
    t             : text;
begin
  assign(t,'t.t'); rewrite(t);
  clrscr;
  write('n : '); readln(n);
  p:=1; a[1]:=1;
  p2:=1; p3:=1; p5:=1;
  c2:=3; c3:=4; c5:=5;
  repeat
      if (c2<=c3) and (c2<=c5) then  {posun pointer  p2 }
        begin
          if a[p]<c2 then begin p:=p+1; a[p]:=c2;  end;
          inc(p2); c2:=2*a[p2]+1;
        end;
      if (c3<=c2) and (c3<=c5) then   { posun pointer  p3 }
        begin
          if a[p]<c3 then begin p:=p+1; a[p]:=c3; end;
          inc(p3); c3:=3*a[p3]+1;
        end;
      if (c5<=c2) and (c5<=c3) then  {posun pointer  p5}
        begin
          if a[p]<c5 then begin p:=p+1; a[p]:=c5; end;
          inc(p5); c5:=5*a[p5];
        end;
  until p>=n;
  writeln(t);
  writeln(t,'Mnozina  n : ',n);
  for i:=1 to n do
    begin
      if i mod 10 = 1 then begin writeln(t); write(t,i:3,'.'); end;
      write(t,a[i]:6);
    end;
  writeln(t);
  close(t);
end.
```