

Рег.Номер: 506

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Баллы: 106

Вариант№: 3

Задание1 (0/3 баллов)

Задание2 (6/10 баллов)

```
program project2;
```

```
{ $mode objfpc } { $H+ }
```

```
uses
```

```
    { $IFDEF UNIX } { $IFDEF UseCThreads }
```

```
    cthreads,
```

```
    { $ENDIF } { $ENDIF }
```

```
Classes
```

```
{ you can add units after this };
```

```
function Ok (i: longint):boolean;
```

```
var
```

```
    sum: integer;
```

```
begin
```

```
    sum := 0;
```

```
    while i <> 0 do
```

```
        begin
```

```

        sum := sum + i mod 10;
        i := i div 10;
    end;
    if sum mod 2 = 0 then
        ok := false
    else
        ok := true;
    end;
end;

var
    A, B, i, Ch:longint;
begin
    Ch := 0;
    read (A, B);
    for i := A to B do
        if Ok (i) then
            Ch := Ch + 1;
        writeln (Ch);
    end.

```

Задание3 (15/15 баллов)

```

program program3;

{$mode objfpc}{$H+}

uses

```

```
{ $IFDEF UNIX } { $IFDEF UseCThreads }  
cthreads,  
{ $ENDIF } { $ENDIF }  
Classes  
{ you can add units after this };
```

```
function TenToTwo (x: integer): string;  
var  
    s, del: string;  
    i: integer;  
begin  
    s := '';  
    while x <> 0 do  
        begin  
            str(x mod 2, del);  
            s := del + s;  
            x := x div 2;  
        end;  
    if length(s) < 8 then  
        for i := 1 to 8-length(s) do  
            s := '0' + s;  
        TenToTwo := s;  
    end;
```

```
function Num1 (s: string): integer;  
var  
    i, Num: integer;  
begin  
    Num := 0;  
    for i := 1 to length(s) do
```

```

        if Copy(s, i, 1) = '1' then
            Num := Num + 1;
        Num1 := Num
    end;

function Power (a, b: integer):integer;
var
    x, i: integer;
begin
    x := 1;
    for i := 1 to b do
        x := a*x;
    Power := x;
end;

function TwoToTen (s: string): integer;
var
    x, i, del, err: integer;
begin
    x := 0;
    for i := 1 to length(s) do
        begin
            val(Copy(s, length(s) + 1 - i, 1), del, err);
            x := x + del*Power(2, i - 1);
        end;
    TwoToTen := x;
end;

var
    Min, A, B, i, m: integer;

```

```

    s, x: string;
begin
    Min := 257;
    read (A, B);
    for i := A to B do
        begin
            s := TenToTwo (i);
            if Num1(s) mod 2 = 0 then
                begin
                    if Num1(Copy(s, 1, length(s) - 1)) mod 2 = 0 then
                        x := '0'
                    else
                        x := '1';
                    s := x + s;
                    s := Copy(s, 1, length(s) - 1);
                    m := TwoToTen (s);
                end
            else
                m := i;
            if m < Min then
                Min := m;
            end;
        end;
    writeln (Min);
end.

```

```

program project4;

procedure FindNum (Ok: boolean; var Num: integer; i, n: integer);
begin
    if i = n then
        Num := Num + 1
    else
        begin
            if ok then
                begin
                    FindNum (not Ok, Num, i + 1, n);
                    FindNum (Ok, Num, i + 1, n);
                    FindNum (Ok, Num, i + 1, n);
                end
            else
                FindNum (not Ok, Num, i + 1, n);
            end;
        end;
end;

var
    n, i, Num: integer;
    ok: boolean;
begin
    readln (n);
    // OK = true => P-P°C...PIP°C, PİPsPrPSCıC,
    // OK = false => P-P°C...PIP°C, PsPİCıC%PµPS
    i := 0;
    Num := 0;
    ok := true;

    FindNum (ok, Num, i, n); // P PµPeCıCıCıPëPIPSP°Cı
    PİCıPScıPµPrCıCıP°

```

```
writeln (Num);  
end.
```

Задание5 (13/27 баллов)

```
program project1;  
  
function Power (N, len: integer): longint;  
var  
    x, i: integer;  
begin  
    x := 1;  
    for i := 1 to len do  
        x := N*x;  
    Power := x;  
end;  
  
var  
    s, x: string;  
    N, Num, Len, i, sum, err: longint;  
begin  
    read (s);  
    x := Copy(s, Pos(' ', s) + 1, length(s));  
    s := Copy(s, 1, Pos(' ', s) - 1);  
    val(x, N, err);  
    Num := Power(N, length(s)); // P$PëCÍP»Ps CÍP»PsPI  
    sum := 0;
```

```

    for i := 1 to N do // PŸC†PëC,P°PµPj PePsP»-PIPs P†C†PePI PI
PsPrPSPsPj P†P»PsPePµ (PëP·PjPµPSCŸPµC,C†CŸ C,PsP»CŸPePs PePsP»-PIPs
C†C,C,PsPN° P†C†PePIC<)

    sum := sum + i;

    sum := sum*Power(N, length(s) - 1); // PŸC†PëC,P°PµPj PePsP»-PIPs
C†C,PëC... P†P»PsPePsPI Pë C†P·PSP°C`Pj PePsP»-PIPs PsPrPSPsPN°
P†C†PePIC< PIPs PIC†PµC... C†P»PsPIP°C...

    Len := sum*length(s); // PJPjPSP°P†P°PµPj C†C,Ps PePsP»-PIPs PSP°
PePsP»-PIPs P†C†PePI

    writeln (Num, ' ', Len);

end.

```

Задание6 (30/30 баллов)

```

program project1;

procedure FindNum (n: integer; i: longint; Num1, Num0: integer; var
Num: longint);
begin
    if i = n then
        Num := Num + 1
    else
        begin
            i := i + 1;
            FindNum (n, i, Num1, Num0 + 1, Num);
            FindNum (n, i, Num1, Num0, Num);
            FindNum (n, i, Num1, Num0, Num);
            FindNum (n, i, Num1, Num0, Num);
            FindNum (n, i, Num1, Num0, Num);
        end
    end
end.

```



```

        if Num0 > Num1 then
            FindNum (n, i, Num1 + 1, Num0, Num);
        end;
    end;

var
    n, Num1, Num0: integer;
    Num, i: longint;
begin
    readln (n);
    Num := 0;
    i := 0;
    Num1 := 0;
    Num0 := 0;
    FindNum (n, i, Num1, Num0, Num);
    writeln (Num);
end.

```

Задание7 (30/30 баллов)

```

program project7;

var
    N, i: integer;
    V, Mass, p, x1, x2, a, b, c, d, k, H: real;
begin
    read (N);

```

```

V := 0;
p := 19.05;
for i := 1 to N do
  begin
    read (x1, x2, a, b, c, d);
    k := (x2 - x1)/100000;
    while x1 < x2 do
      begin
        H := a*sqrt(x1)+2*x1*(b*sqrt(x1)+c)+d*ln(x1+1);
        V := V + k*sqr(H)*pi;
        x1 := x1 + k;
      end;
    end;
  Mass := V*p;
  writeln (round(Mass));
end.

```