



## ششمین دورہ مسابقات از مائشگاہی و رایانہی دانش آموزان میرا سر کشور

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پاسخ سوال اول:

```
INPUT N
CLS : X = 13
FOR I = 0 TO N
  NEMA = I
  ZARIB = 1
  X1 = X
  COLOR I + 1
  FOR U = 1 TO I + 1
    LOCATE X1, (I + 1) * 5
    PRINT ZARIB
    ZARIB = ZARIB * NEMA \ U
    NEMA = NEMA - 1
    X1 = X1 - 2
  NEXT U
  X = X + 1
NEXT I
```

```
DECLARE FUNCTION fact& (n AS INTEGER)
DIM n AS INTEGER, k AS INTEGER, j AS INTEGER
INPUT "enter a number : "; n
k = 0
DO
  k = k + 1 : c = fact(k)
LOOP WHILE c <= n
PRINT n; "=";
FOR j = k - 1 TO 1 STEP -1
  c = fact(j)
  a = n \ c
  IF j = 1 THEN
    PRINT a; ""; j; "!";
  ELSE
    PRINT a; ""; j; "!*";
  END IF
  n = n MOD c
NEXT j
END
FUNCTION fact& (n AS INTEGER)
  p = 1
  FOR i = 1 TO n
    p = p * i
  NEXT i
  fact& = p
END FUNCTION
```

پاسخ سوال دوم:

DIM x(100, 100) AS INTEGER

DIM r AS STRING, s1 AS STRING, s2 AS STRING

DIM skol AS STRING

CLS

INPUT "Enter first number?"; s1

INPUT "Enter second number?"; s2

' revers s1

l = LEN(s1)

r = ""

FOR i = l TO 1 STEP -1

    r = r + MID\$(s1, i, 1)

NEXT i

s1 = r

' revers s2

l = LEN(s2)

r = ""

FOR i = l TO 1 STEP -1

    r = r + MID\$(s2, i, 1)

NEXT i

s2 = r

FOR i = 1 TO LEN(s2)

    FOR j = 1 TO i

        x(i, j) = 0

    NEXT j

    cary = 0

    FOR j = 1 TO LEN(s1)

        d1 = VAL(MID\$(s2, i, 1))

        d2 = VAL(MID\$(s1, j, 1))

        p = d1 \* d2 + cary

        x(i, j + i - 1) = p MOD 10

        cary = p \ 10

    NEXT j

    x(i, j + i - 1) = cary

NEXT i

پاسخ سوال سوم :

cary = 0

FOR i = 1 TO LEN(s1) + LEN(s2) + 1

    Sum = 0

    FOR j = 1 TO LEN(s2)

        Sum = Sum + x(j, i)

    NEXT j

    Sum = Sum + cary : ragam = Sum MOD 10

    cary = Sum \ 10 : skol = CHR\$(ragam + 48) + skol

NEXT i

i = 1

WHILE MID\$(skol, i, 1) = "0"

    i = i + 1

WEND

IF i = LEN(skol) + 1 THEN PRINT 0

FOR i = i TO LEN(skol)

    PRINT MID\$(skol, i, 1);

NEXT i

END

پاسخ سوال چهارم :

```

INPUT A$ : A$ = UCASE$(A$)
MAX$ = "A" : MIN$ = "Z"
FOR U = 1 TO 8
    Z$ = MID$(A$, U, 1)
    IF Z$ > MAX$ THEN MAX$ = Z$
    IF Z$ < MIN$ THEN MIN$ = Z$
NEXT U
K = ASC(MAX$) - ASC(MIN$) + 1
Q = LOG(K) / LOG(2)
IF INT(Q) < Q THEN
    Q = INT(Q) + 1
ELSE
    Q = INT(Q)
END IF
RESULT$ = ""
FOR I = Q TO 1 STEP -1
    S = 0
    FOR T = 1 TO 8
        F$ = MID$(A$, T, 1)
        P = ASC(F$) - ASC(MIN$)
        P1 = P
        FOR E = 1 TO I
            H = P1 MOD 2
            P1 = P1 \ 2
        NEXT E
        S = S + 2 ^ (8 - T) * H
    NEXT T
    RESULT$ = RESULT$ + CHR$(S)
NEXT I
PRINT RESULT$
End
    
```



پاسخ سوال پنجم :

```

DIM a(100) AS SINGLE, x(100, 100) AS SINGLE, t(200) AS SINGLE
DIM n AS INTEGER, s AS STRING, d AS STRING, tv AS STRING, c AS STRING
CLS
degree = 0
INPUT "Enter chand jomlee for Example: 3x^4+5x^3+x^2+6x^1+1x^0"; s
's = "3x^4+5x^3+x^2+6x^1+1x^0"
'tashkiseh zarayab va tavanha
i = 1
WHILE i <= LEN(s)
    d = ""; c = ""
    DO
        d = d + c: c = MID$(s, i, 1): i = i + 1
    LOOP WHILE LCASE$(c) <> "x" AND i <= LEN(s)
    DO
        c = MID$(s, i, 1): i = i + 1:
    LOOP WHILE c <> "^" AND i <= LEN(s)

    tv = ""; c = ""
    DO
        tv = tv + c: c = MID$(s, i, 1): i = i + 1
    LOOP WHILE c <> "+" AND c <> "-" AND i <= LEN(s)
    k = VAL(tv)
    zarib = VAL(d)
    IF k > degree THEN degree = k
    IF k <> 0 AND zarib = 0 THEN zarib = 1
    'if zarib <> 0 and k = 0 then
    a(k) = zarib
WEND
n = degree
'tavan rasandan chand jomleyee
FOR i = 0 TO n
    FOR j = 0 TO 2 ^ n
        x(i, j) = 0
    NEXT j, i
    FOR i = 0 TO n
        FOR j = 0 TO 2 ^ n
            x(i, i + j) = a(i) ^ a(j)
        NEXT j, i
        FOR i = 0 TO 2 ^ n
            FOR j = 0 TO n
                t(i) = t(i) + x(j, i)
            NEXT j
        NEXT i
    CLS
    PRINT "Chand jomleh ASLY"
    FOR i = n TO 0 STEP -1
        IF a(i) <> 0 THEN
            PRINT USING "+###"; a(i);
            IF i <> 0 THEN PRINT "x^"; i;
        END IF
    NEXT i
    PRINT
    PRINT "Resault ="
    PRINT
    FOR i = 2 ^ n TO 0 STEP -1
        IF t(i) <> 0 THEN
            PRINT USING "+###"; t(i);
            IF i <> 0 THEN PRINT "x^"; i;
        END IF
    NEXT i
End

```