NAME
L2REGW − Do weighted simple linear least-squares regression.

SYNOPSIS
CALL L2REGW(X,Y,W,M, BETA,RC)

X(M)	is a REAL*8 vector of independent-variable values
Y(M)	is a REAL*8 vector of corresponding dependent-variable observations
W(M)	is a REAL*8 vector of weights
M	is the INTEGER*4 number of observations in X and Y
BETA(2)	is the REAL*8 vector of coefficients (intercept,slope) returned
RC	is the INTEGER*4 return code; see below

DESCRIPTION
The routine uses formulas [1] to calculate the regression coefficients BETA in y=BETA(1)+BETA(2)*x.

SEE ALSO
L1REGW, which does simple linear least-absolute-values regression
EXPREG, which does exponential regression

DIAGNOSTICS
These are the values that RC can have on return.

−1	a parameter is in error (M < 2, no nonzero weights)
0	all went well
1	the regression line is vertical

LINKAGE
gfortran   source.f   −L${HOME}/lib   −lmisc

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REFERENCES
[1] Walpole, Ronald E., Myers, Raymond H.,
Probability and Statistics for Engineers and Scientists, Macmillan, 1972 (page 284).

EXAMPLE
```
      REAL*8 X(5)/0.D0,1.D0,2.D0,3.D0,4.D0/,W(5)/5*1.D0/
      REAL*8 Y(5)/1.D0,3.D0,5.D0,7.D0,17.D0/,BETA(2)
      INTEGER*4 RC
      CALL L2REGW(X,Y,W,5, BETA,RC)
      WRITE(6,901) RC,BETA
  901 FORMAT('RC=',I3/'y=[',1PE13.6,']+[',1PE13.6,']x')
      STOP
      END
```

This example produced the following output:

```
unix[1]
RC=  0
y=[-6.000000E-01]+[ 3.600000E+00]x
unix[2]
```