```
C This program computes both the slope and deflection of
C a simply-supported beam subjected to a concentrated load P
C located at 1/4 of the meam length L.  This program propmts
C for all the varibles P, L, E, I, and x.

      PROGRAM Simple_Beam
      REAl P, L, E, I, x, slope, Def
      PRINT*, 'Enter Beam Properties, L, E, and I?'
      READ*, L, E, I
      PRINT*, 'Enter the load P?'
      READ*, P
      PRINT*, 'Enter the point x, where slope & deflection is
     +    to be computed?'
      READ*, x

      IF (x .LE. L/4.0)THEN
      slope=(3*P*x**2/8-7*P*L**2/128)/(E*I)
      Def=(P*x**3/8-7*P*L**2*x/128)/(E*I)
      ELSE
      Slope=(-P*x**2/8+P*L*x/4-11*P*L**2/128)/(E*I)
      Def=(-P*x**3/24+P*L*x**2/8-11*P*L**2*x/128+P*L**3/384)/(E*I)
      END IF
      PRINT*, 'For x =',x
      PRINT*, 'Slope = ', slope
      PRINT*, 'Deflection =', def
      END
```