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#COMPILE EXE
#DIM ALL
REM *** illustration of trapezoid rule for design of a batch reactor
REM *** conversion of castor oil into an air-reactive drying oil
REM *** determination of residence time in batch reactor by integration
GLOBAL E,R,T,x,dx,f1,f2,fx,sum,xlimit,zz AS SINGLE
FUNCTION PBMAIN
E=44500:R=1.98:dx=0.0002:xlimit=0.5
x=0
GOSUB 300
f1=fx
100 REM *** continue
x=x+dx
GOSUB 300
f2=fx
sum=sum+(f1+f2)/2*dx
f1=f2
IF x>xlimit THEN 200 ELSE 100
200 REM *** continue
PRINT x,sum,T
INPUT "end program now?";zz
IF zz>0 THEN END
300 REM *** subroutine for function evaluation
T=613-65*x
fx=1/(EXP(35.2-E/(R*T)))*(1-x))
RETURN
END FUNCTION

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