



Tech Info Library

Pascal: Exponents

The calculation 10^X is not included in the UCSD Pascal definition. The system intrinsic PWROFTEN ("power of ten") returns 10^X , provided X is an integer in the range 0..37. (Please refer to page 45 in the Pascal Language Reference manual.)

The function EXP (in the library unit TRANSCEN) is of the form e^X , where X is a real number. The relationship between 10^X and e^X is:

$$10^X = e^{(X \text{ LN } 10)} \quad (\text{LN} = \text{natural log})$$

Here is a simple program which illustrates the use of Pascal exponents:

```
PROGRAM EXPONENT;  
  
USES TRANSCEND;  
  
BEGIN  
  WRITELN ('10 ^ 3 = ',PWROFTEN(3));  
  WRITELN ('e ^ 3 = ',EXP(3));  
  WRITELN ('10 ^ 3 by the conversion = ',EXP(3*LN(10)));  
END.
```

Apple Tech Notes

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