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2 # -----
3 # UNITS
4 # -----
5 set in 1.;           # define basic units -- output units
6 set kip 1.;         # define basic units -- output units
7 set sec 1.;         # define basic units -- output units
8 set LunitTXT "inch"; # define basic-unit text for output
9 set FunitTXT "kip";  # define basic-unit text for output
10 set TunitTXT "sec";  # define basic-unit text for output
11 set ft [expr 12.*$in]; # feet
12 set ksi [expr $kip/pow($in,2)]; # kips per square inch
13 set psi [expr $ksi/1000.]; # pounds per square inch
14 set lbf [expr $psi*$in*$in]; # pounds force
15 set pcf [expr $lbf/pow($ft,3)]; # pounds per cubic foot
16 set psf [expr $lbf/pow($ft,2)]; # pounds per square foot
17 set in2 [expr $in*$in]; # inch^2
18 set in4 [expr $in*$in*$in*$in]; # inch^4
19 set cm [expr $in/2.54]; # centimeter
20 set cmsec2 [expr $cm/pow($sec,2)]; # cm/sec^2
21 set m [expr $cm*100]; # meter
22 set mm [expr $cm/10]; # millimeter
23 set mm2 [expr $mm*$mm]; # millimeter^2
24 set kN [expr 0.2247*$kip]; # kilo newton
25 set N [expr 1.e-3*$kN]; # newton
26 set MN [expr 1.e6*$N]; # mega newton
27 set MPa [expr 0.1450*$ksi]; # mega pascal
28 set GPa [expr 1000*$MPa]; # giga pascal
29 set pi [expr 2*asin(1.0)]; # define constants
30 set g [expr 32.2*$ft/pow($sec,2)]; # gravitational acceleration
31 set Ubig 1.e12; # a really large number
32 set Usmall [expr 1/$Ubig]; # a really small number
33 puts "Basic Units - $LunitTXT, $FunitTXT, $TunitTXT"
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