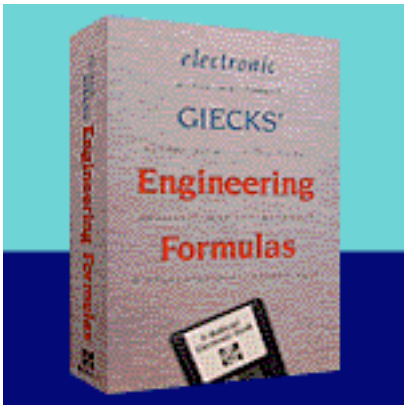
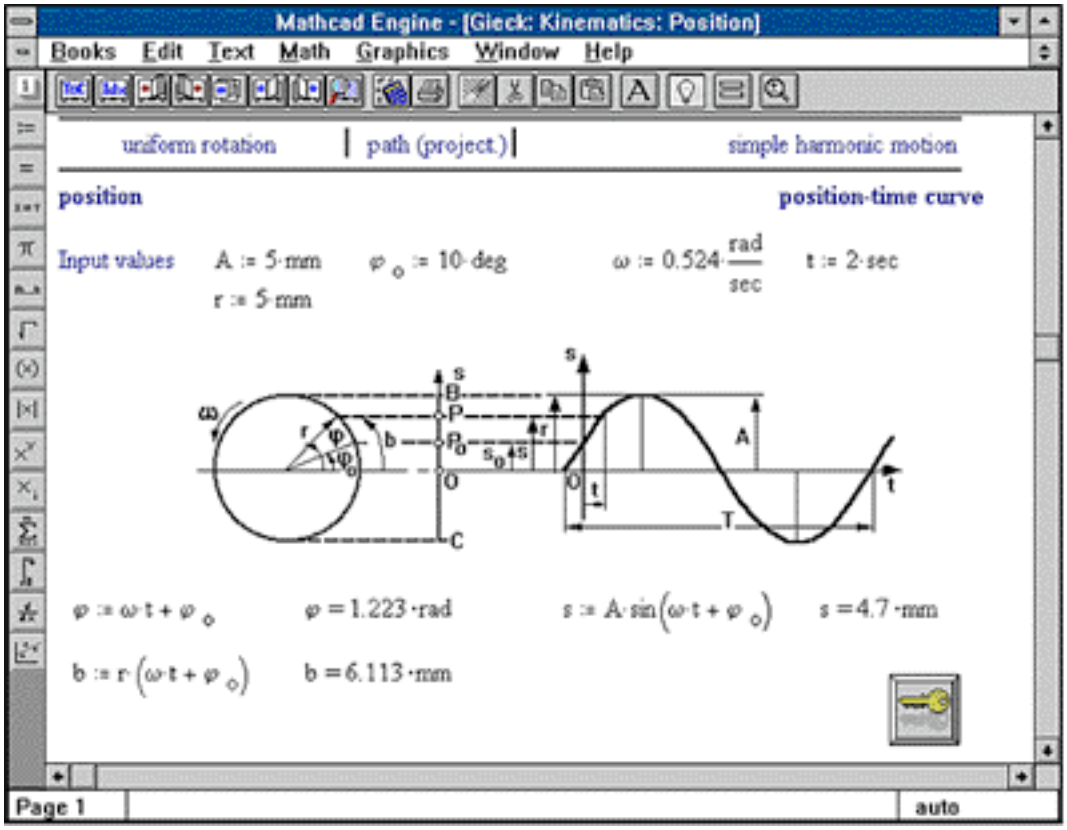
Electronic Giecks': Engineering Formulas



Platform: Windows
Includes the Mathcad Engine; requires 5 MB hard disk space
Available for ground shipment

This is an electronic version of McGraw-Hill's well-known *Engineering Formulas, 6th Edition* by Kurt and Reiner Gieck. Designed for students and professionals, this resource uses the Mathcad Engine to present and solve equations using "live" math. When you change a variable Mathcad recalculates the results automatically. You get instant solutions to the more than 300 technical and many of the mathematical problems that have made Giecks' such a classic. Professionals get online access to reference formulas that they can incorporate in their work. Students will use it as an resource, as well as a learning aid for performing calculations and seeing how results change based on different variables.

Table of Contents | Product Sample | Back to Product List



Position-time curve for linear harmonic oscillation of a body supported by a spring.

Topics include: Units, Areas, Solid Bodies, Arithmetic, Functions of a Circle, Analytical Geometry, Statistics, Differential Calculus, Integral Calculus, Differential Equations, Statics and Kinematics, Dynamics, Hydraulics, Heat, Strength, Machine Parts, Production and Electrical Engineering, Radiation Physics, Chemistry, and more.

Electronic Giecks': Engineering Formulas

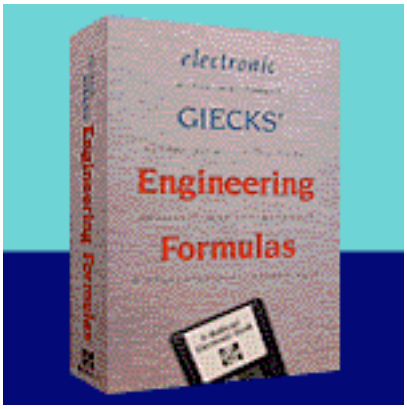


TABLE OF CONTENTS (page 1 of 13)

Electronic Giecks': Engineering Formulas

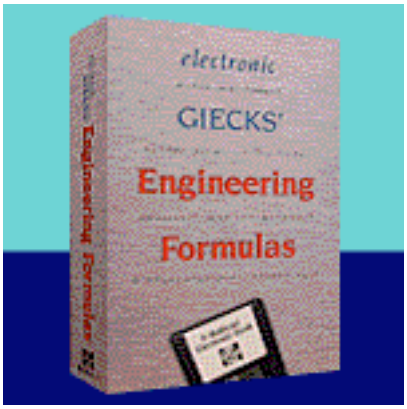


TABLE OF CONTENTS (page 2 of 13)

Electronic Giecks': Engineering Formulas

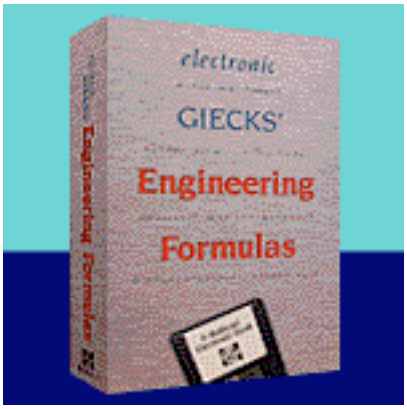


TABLE OF CONTENTS (page 3 of 13)

Electronic Giecks': Engineering Formulas

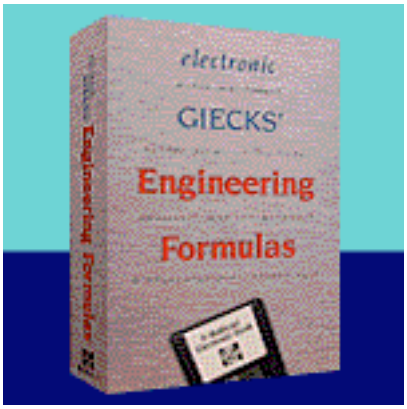


TABLE OF CONTENTS (page 4 of 13)

Electronic Giecks': Engineering Formulas

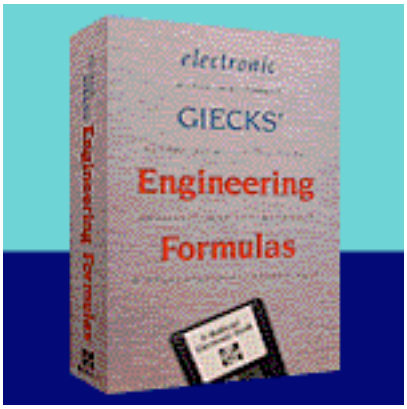


TABLE OF CONTENTS (page 5 of 13)

Electronic Giecks': Engineering Formulas

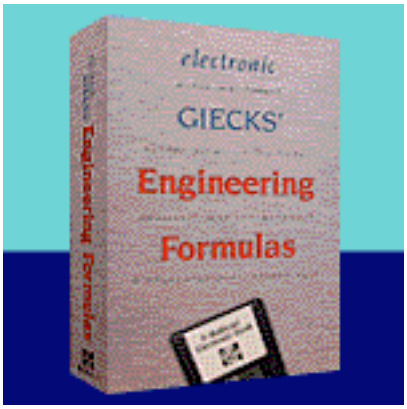


TABLE OF CONTENTS (page 6 of 13)

Statics

Electronic Giecks': Engineering Formulas

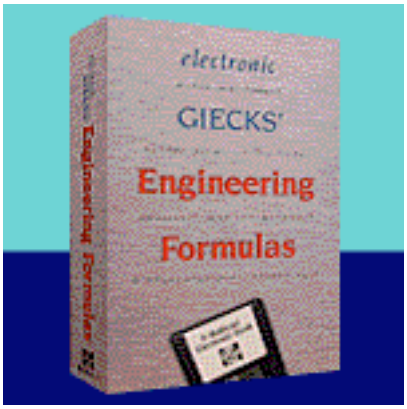


TABLE OF CONTENTS (page 7 of 13)

Heat

Electronic Giecks': Engineering Formulas

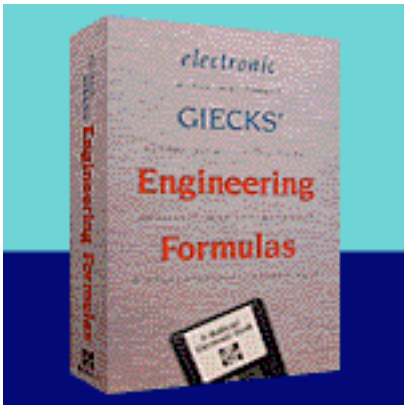


TABLE OF CONTENTS (page 8 of 13)

Electrical Engineering

Electronic Giecks': Engineering Formulas

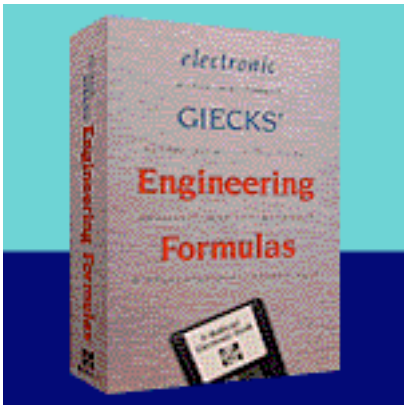


TABLE OF CONTENTS (page 9 of 13)

Electronic Giecks': Engineering Formulas

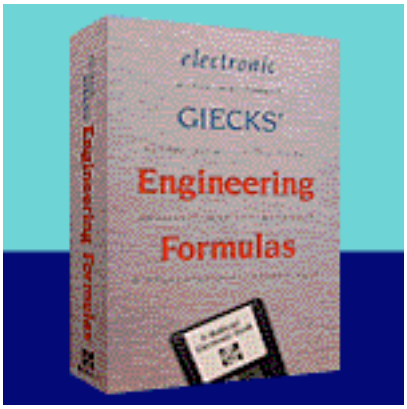


TABLE OF CONTENTS (page 10 of 13)

Electronic Giecks': Engineering Formulas

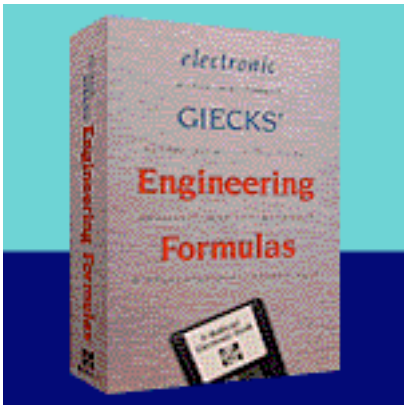


TABLE OF CONTENTS (page 11 of 13)

Electronic Giecks': Engineering Formulas

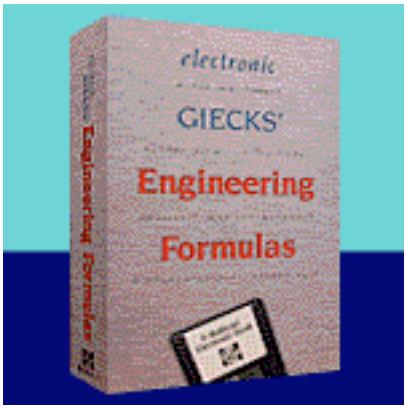


TABLE OF CONTENTS (page 12 of 13)

Electronic Giecks': Engineering Formulas

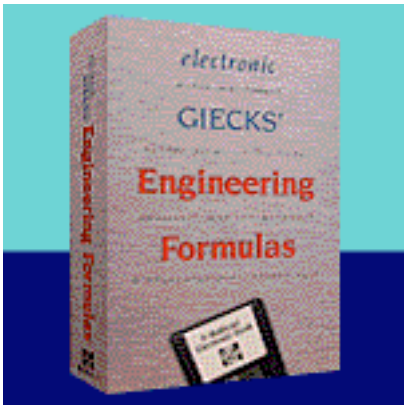
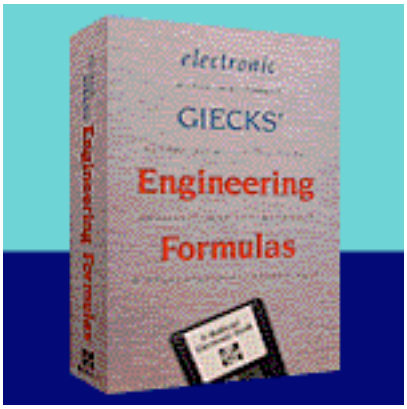


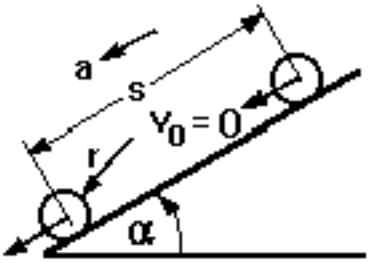
TABLE OF CONTENTS (page 13 of 13)

Electronic Giecks': Engineering Formulas

SAMPLE PAGE (page 1 of 2)



Kinematics: Rolling Motion on an Inclined Plane



Input values

$r := 20 \cdot mm$ $\mu_o := 0.15$ $t := 2 \cdot sec$

(assume a ball) $k := \sqrt{\frac{2}{5} \cdot r^2}$ $f := 0.01 \cdot mm$

excluding friction f = 0 0 . . . amax

$\alpha := \operatorname{atan}\left(\mu_o \cdot \frac{r^2 + k^2}{k^2}\right)$ $a := \frac{g \cdot r^2}{r^2 + k^2} \cdot \sin(\alpha)$ $a = 3.256 \cdot \frac{m}{sec^2}$

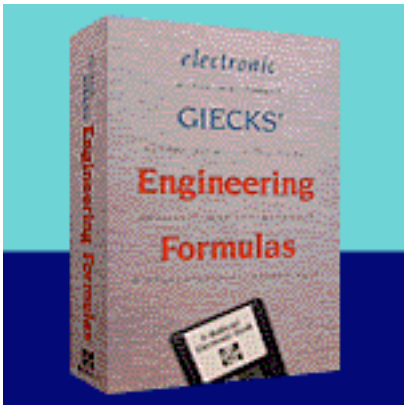
$v := a \cdot t$ $v = 6.512 \cdot \frac{m}{sec}$ $s := \frac{v^2}{2 \cdot a}$ $s = 6.512 \cdot m$

$v := \sqrt{2 \cdot a \cdot s}$ $v = 6.512 \cdot \frac{m}{sec}$ $s := \frac{v \cdot t}{2}$ $s = 6.512 \cdot m$

$v := \frac{2 \cdot s}{t}$ $v = 6.512 \cdot \frac{m}{sec}$ $s := \frac{a \cdot t^2}{2}$ $s = 6.512 \cdot m$

Table of Contents
Back to Product List

Electronic Giecks': Engineering Formulas



SAMPLE PAGE (page 2 of 2)

including friction f > 0

$$\alpha_{min} := \operatorname{atan}\left(\frac{f}{r}\right) \qquad \alpha_{max} := \operatorname{atan}\left(\mu_o \cdot \frac{r^2 + k^2 + f\,r}{k^2}\right) \qquad \alpha := \alpha_{max}$$

$$a := g \cdot r^2 \cdot \frac{\sin(\alpha) - \frac{f}{r} \cdot \cos(\alpha)}{r^2 + k^2} \qquad a = 3.254 \cdot \frac{m}{sec^2}$$

$$v := a \cdot t \qquad v = 6.508 \cdot \frac{m}{sec} \qquad s := \frac{v^2}{2 \cdot a} \qquad s = 6.508 \cdot m$$

$$v := \sqrt{2 \cdot a \cdot s} \qquad v = 6.508 \cdot \frac{m}{sec} \qquad s := \frac{v \cdot t}{2} \qquad s = 6.508 \cdot m$$

$$v := \frac{2 \cdot s}{t} \qquad v = 6.508 \cdot \frac{m}{sec} \qquad s := \frac{a \cdot t^2}{2} \qquad s = 6.508 \cdot m$$

ball $\qquad k^2 = \frac{2}{5} \cdot r^2$

solid cylinder $\qquad k^2 = \frac{r^2}{2}$

Friction numbers pipe with low wall thickness

$$k^2 = \frac{r_1^2 + r_2^2}{2} \qquad \text{approx.} = r^2$$

Table of Contents

Back to Product List