Mathcad Exercises

1 Evaluate the expression:

$$\frac{30{,}000\ \text{lbf}\left(18\,\text{ft}\right)^3}{48\left(30{,}000{,}000\,\frac{\text{lbf}}{\text{in}^2}\right)400\,\text{in}^4}$$

Express the result in inches; use decimals with 4 significant digits of accuracy.

2 Define the variables P = 30,000 lbf, L = 18 ft, E= 30,000,000 lbf/in^2, and I = 400 in^4, and the expression

$$\delta = \frac{PL^3}{48EI}$$

Evaluate the expression for δ.

3 Define the variables a = 2, b= 14, and c = 3 and evaluate

$$\frac{-b+\sqrt{b^2-4ac}}{2a}$$

4 Simplify the expression

$$\left(x-1\right)^2+2x^2+4x-1$$

Use the live symbolic evaluator Ctrl-Shift-Period

5 Evaluate the integral

$$\int_0^3 4x^2+2x-1$$

Use the symbolic evaluator Ctrl-Period

6 Take the derivative

$$\frac{d}{dx}\frac{\tan x}{x}$$

Use the symbolic evaluator Ctrl-Period