

Problem 3: Basic Maple Usage

$$\frac{7}{9} + \frac{5}{\frac{4}{13}}$$

$$\frac{613}{36} \quad (1.1)$$

$$\sqrt{3} \cdot \sin\left(\frac{2}{3} \cdot \pi\right)$$

$$\frac{3}{2} \quad (1.2)$$

$$\int_0^{\pi} \frac{x^{\frac{5}{2}}}{x^2 + 1} dx$$

$$\begin{aligned} & -\frac{1}{12} \sqrt{2} \left(-4 \sqrt{2} \pi^{3/2} + 3 \ln\left(\frac{\pi - \sqrt{2} \sqrt{\pi} + 1}{\pi}\right) - 6 \arctan\left(\frac{1 + \sqrt{2} \sqrt{\pi}}{-1 + 2\pi}\right) \right. \\ & \left. - 3 \ln\left(\frac{\pi + \sqrt{2} \sqrt{\pi} + 1}{\pi}\right) - 6 \arctan\left(\frac{\sqrt{2} \sqrt{\pi} - 1}{-1 + 2\pi}\right) + 6\pi \right) \end{aligned} \quad (1.3)$$

$$\frac{d}{dt} \operatorname{arccosh}(t)$$

$$\frac{1}{\sqrt{t-1} \sqrt{t+1}} \quad (1.4)$$

$$e^{\ln(42)}$$

$$42 \quad (1.5)$$

$$0^0$$

$$1 \quad (1.6)$$

Problem 4: Prime Numbers

`isprime(11111111111111111111)`

false (2.1)

`isprime(11111111111111111111)`

true (2.2)

`isprime(4776913109852041418248056622882488319)`

true (2.3)

`isprime(56713727820156410577229101238628035243)`

true (2.4)

`isprime(317810483173934359805482319433298719761)`

false (2.5)