

A1Q2

Using the **evalf** command, calculate the following values **to 20 decimal places**.

$$\pi = 3.141 \dots, \quad \sqrt{3} = 1.732 \dots, \quad e = 2.718 \dots, \quad \int_0^1 e^{-x^2} dx = 0.746 \dots, \text{ and}$$

$$f''(1) = 10.66 \dots \text{ where } f(x) = \tan(x).$$

> **restart;**

> **evalf(Pi,20);**

$$3.1415926535897932385 \quad (1)$$

> **evalf(sqrt(3),20);**

$$1.7320508075688772935 \quad (2)$$

> **evalf(exp(1),20);**

$$2.7182818284590452354 \quad (3)$$

> **f := int(exp(-x^2),x=0..1);**

$$f := \frac{\operatorname{erf}(1) \sqrt{\pi}}{2} \quad (4)$$

> **evalf(f,20);**

$$0.74682413281242702540 \quad (5)$$

> **f := tan(x);**

$$f := \tan(x) \quad (6)$$

> **g := diff(f,x);**

$$g := 1 + \tan(x)^2 \quad (7)$$

> **h := diff(g,x);**

$$h := 2 \tan(x) (1 + \tan(x)^2) \quad (8)$$

> **a := eval(h,x=1);**

$$a := 2 \tan(1) (1 + \tan(1)^2) \quad (9)$$

> **evalf(a,22);**

$$10.66985894497531748258 \quad (10)$$