```
> Digits:=10;
```

$$Digits := 10 \tag{1}$$

```
> f := h -> (evalf(evalf(sqrt(2))+h)^2-evalf(evalf(sqrt(2))-h)^2)/(2*h)-2*
  evalf(sqrt(2));
```

$$f := h \to \frac{1}{2}\,\frac{evalf\left(evalf\left(\sqrt{2}\right)+h\right)^2 - evalf\left(evalf\left(\sqrt{2}\right)-h\right)^2}{h} - 2\,evalf\left(\sqrt{2}\right) \tag{2}$$

```
> for j from 1 to 10 do
  evalf(10^(-j));f(10^(-j));
  od;
```

$$0.1000000000$$
$$-4.\ 10^{-9}$$
$$0.01000000000$$
$$-2.4\ 10^{-8}$$
$$0.001000000000$$
$$-1.24\ 10^{-7}$$
$$0.0001000000000$$
$$0.000002876$$
$$0.00001000000000$$
$$-0.000027124$$
$$0.000001000000000$$
$$-0.000427124$$
$$1.000000000\ 10^{-7}$$
$$0.001572876$$
$$1.000000000\ 10^{-8}$$
$$-0.028427124$$
$$1.000000000\ 10^{-9}$$
$$0.171572876$$
$$1.000000000\ 10^{-10}$$
$$-2.828427124 \tag{3}$$

```
> Digits:=20;
```

$$Digits := 20 \tag{4}$$

```
> f := h -> (evalf(evalf(sqrt(2))+h)^2-evalf(evalf(sqrt(2))-h)^2)/(2*h)-2*
  evalf(sqrt(2)):

> for j from 1 to 10 do
  evalf(10^(-j));f(10^(-j));
  od;
```

$$0.10000000000000000000$$

$$4.\ 10^{-19}$$

$$0.010000000000000000000$$

$$2.4\ 10^{-18}$$

$$0.0010000000000000000000$$

$$2.4\ 10^{-18}$$

$$0.00010000000000000000000$$

$$-9.76\ 10^{-17}$$

$$0.000010000000000000000000$$

$$-9.76\ 10^{-17}$$

$$0.0000010000000000000000000$$

$$9.9024\ 10^{-15}$$

$$1.0000000000000000000\ 10^{-7}$$

$$-1.900976\ 10^{-13}$$

$$1.0000000000000000000\ 10^{-8}$$

$$3.8099024\ 10^{-12}$$

$$1.0000000000000000000\ 10^{-9}$$

$$3.8099024\ 10^{-12}$$

$$1.0000000000000000000\ 10^{-10}$$

$$2.538099024\ 10^{-10}$$

(5)