```
> restart;
> A1 := diff(arctan(1 + x²), x);
```

$$A1 := \frac{2x}{1 + (1 + x^2)^2} \tag{1}$$

```
> simplify(A1);
```

$$\frac{2x}{2 + 2x^2 + x^4} \tag{2}$$

```
> A2 := diff( exp(x) / (1 + |sin(x)|³) , x);
```

$$A2 := \frac{e^x}{1 + |\sin(x)|^3} - \frac{3 \, e^x \, |\sin(x)|^2 \, \text{abs}(1, \sin(x)) \, \cos(x)}{\left(1 + |\sin(x)|^3\right)^2} \tag{3}$$

```
> simplify(A2) assuming x :: real;
```

$$\frac{e^x \left(1 + |\sin(x)|^3 - 3 \, \text{signum}(\sin(x)) \, \cos(x) + 3 \, \text{signum}(\sin(x)) \, \cos(x)^3\right)}{1 + 2 \, |\sin(x)|^3 + |\sin(x)|^6} \tag{4}$$

```
> ?abs
> A4 := diff( (cos(x) + 2)ˣ, x);
```

$$A4 := (\cos(x) + 2)^x \left(\ln(\cos(x) + 2) - \frac{x \sin(x)}{\cos(x) + 2} \right) \tag{5}$$

```
> A5 := diff(x²·sin(2·x)·cos(2·x), x);
```

$$A5 := 2x \sin(2x) \cos(2x) + 2x^2 \cos(2x)^2 - 2x^2 \sin(2x)^2 \tag{6}$$

```
> simplify(A5);
```

$$2x \left(\sin(2x) \cos(2x) + 2x \cos(2x)^2 - x \right) \tag{7}$$

```
> A3 := diff(ln(sin(x) - 4), x);
```

$$A3 := \frac{\cos(x)}{\sin(x) - 4} \tag{8}$$

```
>
```