```
> f:=arctan(x/y);
```

$$f := \arctan\left(\frac{x}{y}\right)$$

```
> diff(f,x,x)=simplify(diff(f,x,x));
diff(f,x,y)=simplify(diff(f,x,y));
diff(f,y,y)=simplify(diff(f,y,y));
```

$$-\frac{2x}{y^3\left(1+\frac{x^2}{y^2}\right)^2} = -\frac{2yx}{(y^2+x^2)^2}$$

$$-\frac{1}{y^2\left(1+\frac{x^2}{y^2}\right)} + \frac{2x^2}{y^4\left(1+\frac{x^2}{y^2}\right)^2} = \frac{-y^2+x^2}{(y^2+x^2)^2}$$

$$\frac{2x}{y^3\left(1+\frac{x^2}{y^2}\right)} - \frac{2x^3}{y^5\left(1+\frac{x^2}{y^2}\right)^2} = \frac{2yx}{(y^2+x^2)^2}$$

```
> f:=x^2+y^3-2*x*y-y+4;
```

$$f := x^2 + y^3 - 2xy - y + 4$$

```
> xxx:=solve([diff(f,x),diff(f,y)],[x,y]);
```

$$xxx := \left[\left[x=\frac{-1}{3}, y=\frac{-1}{3}\right]\ [x=1, y=1]\right]$$

```
>
Student[MultivariateCalculus][SecondDerivativeTest](f,[x,y]=[seq(
subs(xxx[i],[x,y]),i=1..2)]);
```

$$LocalMin = [[1, 1]],\ LocalMax = [\ ],\ Saddle = \left[\left[\frac{-1}{3}, \frac{-1}{3}\right]\right]$$

```
> Int(x^2*ln(x),x)=int(x^2*ln(x),x);
```

$$\int x^2 \ln(x)\, dx = \frac{1}{3}x^3 \ln(x) - \frac{x^3}{9}$$

```
> Int(sin(x)*cos(x)^2,x)=int(sin(x)*cos(x)^2,x);
```

$$\int \sin(x)\cos(x)^2\, dx = -\frac{1}{3}\cos(x)^3$$

```
>
```