

[2.21] Differentiation and integration fail with *part()*

The *part()* function is used to extract parts of an expression. However, in AMS 2.05, differentiation and integration can fail when applied to *part*. For example, this expression

```
d(part(e^(2*t)*sin(t),2),t)
returns 0, but it should return
```

$$2*(e^{2*t})$$

Incorrect results are also returned if you try to integrate the result of a *part()* operation. One work-around is to save the result of the *part()* operation, then take the derivative or integral of the saved result. This example saves the *part()* result to a variable called *xx*:

```
part(e^(2*t)*sin(t),2)->xx
d(xx,t)
```

The correct differentiation result is returned because the contents of *xx* are differentiated.

(Bug found by ES)