

diff_function.c

```
double* f(double x1, double x2, double dx1, double dx2) {  
    double w3, w4, w5, dw3, dw4, dw5, df[2];  
    w3 = x1 * x2;  
    dw3 = dx1 * x2 + x1 * dx2;  
    w4 = sin(x1);  
    dw4 = cos(x1) * dx1;  
    w5 = w3 + w4;  
    dw5 = dw3 + dw4;  
    df[0] = w5;  
    df[1] = dw5;  
    return df;  
}
```

