

## Week 14 - Exercise problems

April 2016

### Example 1.

Find the general antiderivative of the following functions

a.  $f(x) = e^{3x-2}$

b.  $f(x) = x \cos(3x^2 + 5)$

c.  $f(x) = 0$

d.  $f(x) = xe^x + e^x$

e.  $f(x) = \frac{1}{x^2}$

f.  $f(x) = \frac{\cos(x)}{(\sin(x))^2}$

### Example 2.

Find the 5<sup>th</sup> order Taylor polynomial for  $f(x) = \sin(x)$  centered at  $x = 0$ .

### Example 3.

Find the 5<sup>th</sup> order Taylor polynomial for  $f(x) = \cos(x)$  centered at  $x = 0$ .