

1. Find the general anti-derivative of  $f'(x) = 3x^2 + 2x - 1$

2. Find the general anti-derivative of  $f'(x) = e^x + \frac{1}{x}$

3. Find the general anti-derivative of  $f'(x) = \frac{1}{1+x^2} + \cos(x)$

4. Find the specific anti-derivative  $f$  if  $f'(x) = 20x^3 - 23x^2 + 6x$  and  $f(1) = 0$