

AUC apCalculus BC

Assignment 16

apBC

Assignment on Derivatives

AUC

Compute the following derivatives $f'_n(x)$

1. $f_1(x) = x$
2. $f_2(x) = x^x$
3. $f_3(x) = x^{x^x}$
4. $f_4(x) = (x^3 + x + 1)^{x^2 + x + 1}$
5. $f_5(x) = \sin(\cos(x^2))$
6. $f_6(x) = \sin^4(\cos^3(x^4))$
7. $f_7(x) = f_6(x)^{\sin(f_2(x))}$

8. $f_8 = \frac{1}{1 + \frac{1}{1 + \frac{1}{\sqrt{x}}}}$
9. $f_9(x) = x^{(x-1)(x-2)(x-3)(x-4)}$
10. $f_{10}(x) = \tan(\cos(\sin(\cot(f_3(x))))$