

Preface

Here are a set of problems for my Calculus I notes. These problems do not have any solutions available on this site. These are intended mostly for instructors who might want a set of problems to assign for turning in. I try to put up both practice problems (with solutions available) and these problems at the same time so that both will be available to anyone who wishes to use them.

As with the set of practice problems I write these as I get the time and some sections will have only a few problems at this point and others won't have any problems in them yet. Rest assured that I'm always trying to get more problems written but this site has been written and maintained in my spare time and so I usually cannot devote as much time as I'd like to the site.

Average Function Value

For problems 1 – 4 determine f_{avg} for the function on the given interval.

1. $f(x) = 8x^4 - 7x^3 + 2$ on $[-2, 1]$
2. $f(x) = (4 - x)e^{x^2 - 8x}$ on $[1, 4]$
3. $f(x) = 6x - \frac{4x}{x^2 + 1}$ on $[-3, 0]$
4. $f(x) = \cos(3x)[2 + \sin(3x)]^4$ on $[0, \frac{\pi}{6}]$

For problems 5 – 8 find f_{avg} for the function on the given interval and determine the value of c in the given interval for which $f(c) = f_{\text{avg}}$.

5. $f(x) = 10 - 4x - 6x^2$ on $[2, 6]$
6. $f(x) = 7x^2 + 2x - 3$ on $[-1, 1]$
7. $f(x) = 9 - 2e^{4x+1}$ on $[-1, 2]$

8. $f(x) = 8 - \cos\left(\frac{x}{4}\right)$ on $[0, 4\pi]$