Summer 2016 Math 152

Week in Review 2

courtesy: Amy Austin

(covering 8.1-8.3)

Section 7.5

1. Find the average value of the function $f(x) = \sqrt{x+1}$ over the interval $[3, 8]$
2. Find the numbers b such that the average value of $f(x) = 2 + 6x - 3x^2$ on the interval $[0, b]$ is equal to 4.
3. Find the average value of $f(x) = 4x - x^2$ over the interval $[0, 3]$ and find the value of c that satisfies the Mean Value Theorem for Integrals.

Section 8.1

4. $\int xe^{7x}\,dx$
5. $\int 3x\cos x\,dx$
6. $\int_0^1 xe^{2x}\,dx$
7. $\int \frac{\ln x}{x^2}\,dx$
8. $\int_2^3 \ln x\,dx$
9. $\int \arccos x\,dx$
10. $\int x^5\sin(x^3)\,dx$

Section 8.2

11. $\int \sin^2 x\cos^3 x\,dx$
12. $\int_0^{\pi/8} \cos^2 4x\,dx$
13. $\int \tan^5 x\sec^3 x\,dx$
14. $\int \frac{\sec^4 x}{\tan^7 x}\,dx$
15. $\int \frac{\sin^2(\ln x)}{x}\,dx$

Section 8.3

16. $\int x^3\sqrt{4-x^2}\,dx =$
17. $\int_0^2 \frac{x^3}{\sqrt{x^2+4}}\,dx =$
18. $\int \frac{1}{x^2\sqrt{16x^2-9}}\,dx =$
19. $\int \frac{dx}{\sqrt{x^2+4x+8}}\,dx =$
20. $\int \sqrt{1-4x^2}\,dx =$