**Mat 115 Worksheet 6 Answers**
**Thursday, Oct 19 2017**

1. (a) $\frac{4}{3}x^3 + 2x^2 + x + C$, (b) $-\frac{1}{x} + \frac{4}{3}x^{-3/2} + C$, (c) $x + \frac{1}{3}\sin 3x + C$, (d) $\frac{1}{2}\sec 2x$, (e) $12\ln|x| + C$, (f)$\arctan x + C$, (g) $\frac{4}{7}x^{7/4} + \frac{2}{7}x^{7/2} + C$, (h) $\ln(e^x + e^{-x}) + C$.

2. (a) $f(t) = -\cos t + t^2 + 6$, (b)$h(x) = x/2 - \frac{1}{4}\sin 2x + 1/2 + \frac{\sin 2}{4}$

3. $4\pi$

4. (a) 212/5, (b) 20, (c)7/6, (d) $\pi/6$, (e) 1, (f) $\pi/2$, (g) $\frac{\ln(9/2)}{3}$, (h) -2

5. 24

6. (a) $(1+x^2)^{-3}$, (b) $2x(1+x^4)^{-3}$, (c) $2x(1+x^4)^{-3} - 3x^2(1+x^6)^{-3}$

7. (a) $v(t) = -\frac{8}{\pi}\cos\frac{\pi t}{4}$; $s(t) = -\frac{32}{\pi^2}\sin\frac{\pi t}{4}$, (b) $\pm 32/\pi^2$, (c) 0 and 0

8. 8

9. 1