HW #8 Final Answers

1. $\frac{1}{6}\left[\operatorname{arcsec}\left(\frac{x}{3}\right) - \frac{3\sqrt{x^2-9}}{x^2}\right] + C$

2. $\frac{1}{16}\left[\frac{\sqrt{x^2-16}}{x}\right] + C$

3. $\arcsin\left(\frac{x+2}{\sqrt{8}}\right) + C$

4. $\frac{\pi}{6\sqrt{3}}$

5. $2\left[\arcsin\left(\frac{x+1}{2}\right) + \frac{(x+1)\sqrt{4-(x+1)^2}}{4}\right] + C$

6. $\frac{1}{2}\ln\left|(x+1)^2+4\right| + \frac{3}{2}\arctan\left(\frac{x+1}{2}\right) + C$

7. $\ln\left(\frac{3}{8}\right)$ OR $-\ln\left(\frac{8}{3}\right)$

8. $-\frac{\arctan x}{x} + \ln|x| - \frac{1}{2}\ln|x^2+1| + C$

9. $\ln 2$

10. $\frac{x^3}{3} + \frac{1}{2}\ln|x^2+9| + \frac{2}{3}\arctan\left(\frac{x}{3}\right) + C$

11. $\ln|x-1| - \frac{1}{2}\ln|x^2+9| - \frac{1}{3}\arctan\left(\frac{x}{3}\right) + C$

12. $\frac{x^2}{2} + x + 2\ln|x-7| + \frac{3}{2}\ln|x^2+2| - \frac{1}{\sqrt{2}}\arctan\left(\frac{x}{\sqrt{2}}\right) + C$