

## HW#4 Final Answers

1.  $\frac{\pi}{6}$

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

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

4.  $\frac{\pi}{48}$

5.  $\frac{1}{2} \arcsin(x^2) + C$

6.  $x - 2 \arctan\left(\frac{x}{2}\right) + C$

7.  $2x + 3 \arctan x + C$

8.  $\frac{1}{\sqrt{5}} \arctan\left(\frac{\arctan x}{\sqrt{5}}\right) + C$

9.  $\frac{\pi}{18}$

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

11.  $\infty$

12.  $-\infty$

13.  $-\infty$

14.  $-\infty$

15.  $\infty$

16.  $0$

17.  $0$

18.  $-\infty$

19.  $\infty$

20.  $-\frac{\pi}{2}$

21. Justify