

1.(a) 27

1.(b) 81

2.(a) $\frac{7}{6}$

2.(b) $\frac{5}{4}$

3. $\frac{\pi^2}{8}$

4. $4\pi^2$

7.(a) $2\pi + \frac{2}{3}$

7.(b) $2\pi + \frac{2}{3}$

7.(c) $2\pi + \frac{2}{3}$

8.(a) $\frac{5\sqrt{5}-1}{12}$

8.(b) 0

8.(c) $\frac{\pi}{2}$