

## Review 2

1. (a)  $\frac{2}{27}(3^{3/2} - 8)$ .  
 (b)  $\frac{1}{3} \left[ \left( \frac{\pi^2}{4} + 4 \right)^{3/2} - 8 \right]$ .  
 (c)  $\frac{2\pi + 3\sqrt{3}}{8}$ .
2.  $\frac{6\pi}{5}$ .
3. (a)  $\frac{\pi}{12}$ .  
 (b)  $\frac{1}{2}$ .
4. (a)  $\frac{3\pi}{4}$ .  
 (b)  $\frac{7\sqrt{3}}{2} - \pi$ .
5. (a)  $(y - 1)^2 = 4(x - 1)$ .  
 (b)  $(x - 1)^2 - 3(y - 2)^2 = 1$ .
6. (a) vertexes:  $(-1, 1), (3, 1), (1, 0), (1, 2)$ ; foci:  $(1 \pm \sqrt{3}, 1)$ .  
 (b) vertexes:  $(0, -3), (-4, -3)$ ; foci:  $(-2 \pm \sqrt{13}, -3)$ ; asymptotes:  $y + 3 = \pm \frac{3}{2}(x - 2)$ .
7.  $6, \bar{i} - 2\bar{j} + \bar{k}, 0$ .
8.  $\cos^{-1} \left( \frac{6}{\sqrt{42}} \right)$ .
9.  $\frac{\sqrt{6}}{2}$ .
10.  $\frac{x-1}{3} = \frac{y-2}{3} = \frac{z-3}{3}$ .
11.  $\cos^{-1} \left( \frac{6}{\sqrt{42}} \right)$ .
12.  $\sqrt{\frac{3}{7}}$
13.  $x + 2y - z = 2$ .
14.  $\frac{5}{\sqrt{6}}$ .
15.  $\frac{x-1}{0} = \frac{y-2}{1} = \frac{z-3}{-1}$ .