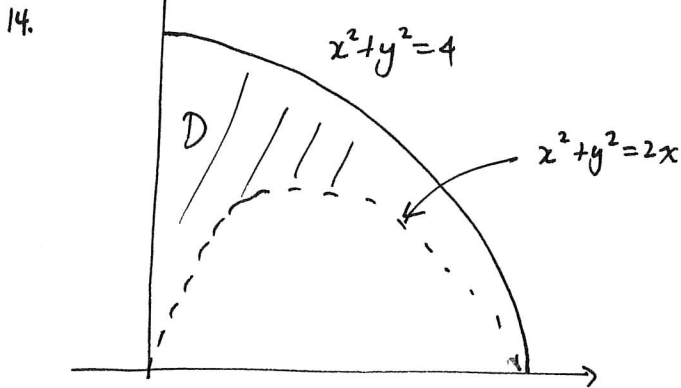


15.3

16. $\frac{\pi}{2} (b^2 - a^2)$



$$V = \int_0^{\frac{\pi}{2}} \int_0^2 r^2 \cos \theta \, dr \, d\theta - \int_0^{\frac{\pi}{2}} \int_0^{2 \cos \theta} r^2 \cos \theta \, dr \, d\theta.$$

$$V = \frac{16 - 3\pi}{6}$$

26. Notice that the two paraboloids intersect

when $6 - x^2 - y^2 = 2x^2 + 2y^2 \Rightarrow x^2 + y^2 = 2.$

so for $x^2 + y^2 \leq 2$, $z = 6 - x^2 - y^2$ is above $z = 2x^2 + 2y^2$

ANS = 6π

30. $\frac{2}{3} a^3.$