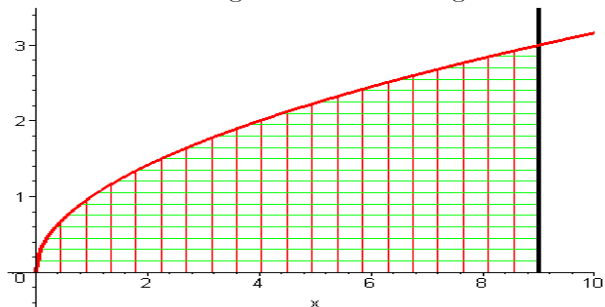


**Q.1:** Evaluate the integral  $\int_0^3 \int_{y^2}^9 y \cos(x^2) dx dy$ .

**Sol:** We need to change the order of integration



$$\int_0^9 \int_0^{\sqrt{x}} y \cos(x^2) dy dx = \frac{1}{4} \sin 81.$$

**Q.2:** Find volume of the solid bounded by the cylinder  $x^2 + y^2 = 4$  and the planes  $z = 2y$ ,  $x = 0$ ,  $z = 0$  in the first octant.

**Sol:** E

**Q.3:** Evaluate the integral  $\iint_R \cos(x^2 + y^2) dA$ , where  $R$  is the region that lies above the  $x$ -axis and within the circle  $x^2 + y^2 = 4$ .

**Sol:** E