

$$(14) \quad x + 2y + 3z = 1$$

$$x^2 + y^2 = 3$$

$$z = \frac{1}{3} (1 - x - 2y)$$

$$r^2 = 3$$

$$r \in [0, \sqrt{3})$$

$$\frac{\partial z}{\partial x} = -\frac{1}{3} \quad \frac{\partial z}{\partial y} = -\frac{2}{3}$$

$$\text{Area} = \sqrt{1 + \frac{1}{9} + \frac{4}{9}} = \sqrt{\frac{14}{9}} = \frac{\sqrt{14}}{3}$$

$$A(s) = \iint_D \frac{\sqrt{14}}{3} dA = \frac{\sqrt{14}}{3} \iint_D dA = \frac{\sqrt{14}}{3} (\pi (\sqrt{3})^2)$$

$$= \frac{\sqrt{14}}{3} (3\pi) = \boxed{\pi\sqrt{14}}$$