1.(1)
D(1, 1, 1) or D(-2, 4, -8)

1.(2)
$$v = \frac{1}{6}|\overrightarrow{AB}(\overrightarrow{AC} \times \overrightarrow{AD})| = \frac{1}{3}$$

2.(1)
$$x = \frac{14}{15}z + 1$$
$$y = \frac{2}{15}z$$
$$z = z$$

2.(2)
$$\sqrt{13 - \frac{49^2}{425}} = \sqrt{\frac{3124}{425}} = \frac{2}{5}\sqrt{\frac{781}{17}}$$

3. $\rho^2 = 16 + 4\rho\sin\phi\cos\theta$

4.
$< 2, \sqrt{3}\,t, t >$ or $\begin{cases} x = -2 \\ y = \sqrt{3}\,t \\ z = \phantom{\sqrt{3}\,}t \end{cases}$

5.
$4\rho^2\tan\Phi\sin\Phi = \rho$

6.(1)
$z = -2x + 3$

6.(2)
0.98