4.7

1) $\delta(\mathrm{P}\,;\pi) = \dfrac{|\,2\cdot(-8) - 2\cdot 7 + 0 + 6\,|}{\sqrt{2^2 + (-2)^2 + 1^2}} = \dfrac{|\,-24\,|}{\sqrt{9}} = \dfrac{24}{3} = 8$

2) $\delta(\mathrm{P}\,;\pi) = \dfrac{|\,3\cdot 15 - 2\cdot(-2) + 5 - 12\,|}{\sqrt{3^2 + (-2)^2 + 1^2}} = \dfrac{|42|}{\sqrt{14}} = \dfrac{42\sqrt{14}}{14} = 3\sqrt{14}$

3) Déterminons l'équation cartésienne du plan π en éliminant les paramètres :

$$\left\{\begin{array}{rcl} x = -11 + 12\,\lambda + \mu & \Big| & \cdot 1 \\ y = \quad 4 - \quad 6\,\lambda & & \\ z = \quad -4 - \quad 5\,\lambda + \mu & \Big| & \cdot(-1) \end{array}\right.$$

$$\left\{\begin{array}{rcl} x - z = -7 + 17\,\lambda & \Big| & \cdot 6 \\ y = \quad 4 - \quad 6\,\lambda & \Big| & \cdot 17 \end{array}\right.$$

$6\,x + 17\,y - 6\,z = 26$ c'est-à-dire $6\,x + 17\,y - 6\,z - 26 = 0\,.$

$$\delta(\mathrm{P}\,;\pi) = \frac{|\,6\cdot 2 + 17\cdot(-3) - 6\cdot 5 - 26\,|}{\sqrt{6^2 + 17^2 + (-6)^2}} = \frac{|\,-95\,|}{\sqrt{361}} = \frac{95}{19} = 5$$