In the figure shown below, find the magnitude and direction of the electric field at the origin (P).

$$\vec{E}_p = \vec{E}_1 + \vec{E}_2$$

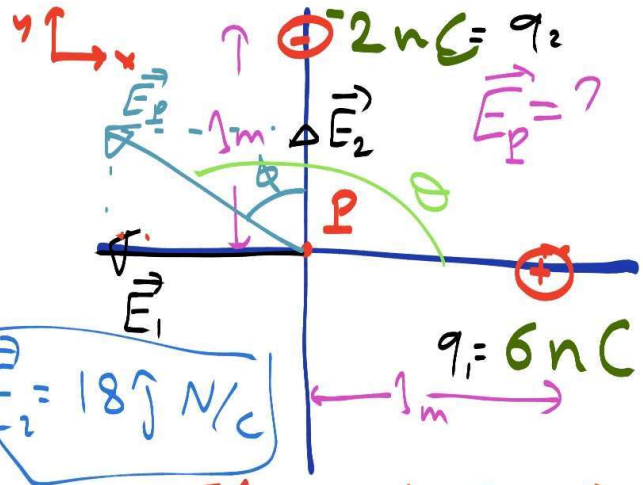
$$\vec{E}_1 = k_e \frac{|q_1|}{r_1^2}(-\hat{i}) = 9\times10^9 \times \frac{6\times10^{-9}}{2^2}(-\hat{i})$$

$$\Rightarrow \boxed{\vec{E}_1 = 54(-\hat{i})\ N/C}$$

$$\vec{E}_2 = k_e \frac{|q_2|}{r_2^2}(+\hat{j}) = 9\times10^9 \times \frac{2\times10^{-9}}{1^2} \Rightarrow \boxed{\vec{E}_2 = 18\hat{j}\ N/C}$$

$$\boxed{\vec{E}_p = (-54\hat{i} + 18\hat{j})\ N/C}$$

$$E_p = \sqrt{(-54)^2 + (18)^2} = \boxed{56.9\ N/C}$$



Note $\tan\phi = \frac{54}{18} = 3 \Rightarrow \phi = 71.6^\circ$

$\Rightarrow \theta = 90 + 71.6^\circ$

$$\boxed{\theta = 161.6^\circ}$$