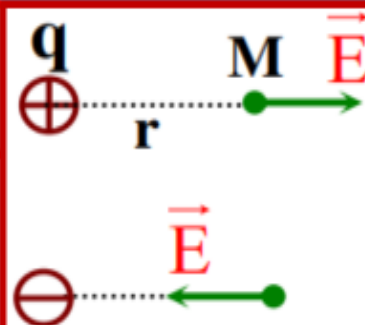


DẠNG 2: ĐIỆN TRƯỜNG E (V/m)

NHẮC LẠI

$$F = 9.10^9 \frac{|q_1 q_2|}{\epsilon.r^2}$$

$$E = 9.10^9 \frac{|q|}{\epsilon.r^2}$$

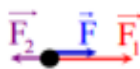


Cộng 2 vec-tơ lực: $\vec{F} = \vec{F}_1 + \vec{F}_2$

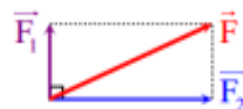
+ $\vec{F}_1 \uparrow \uparrow \vec{F}_2 \Rightarrow F = F_1 + F_2$ ($\vec{F}$ cùng chiều $\vec{F}_1, \vec{F}_2$)



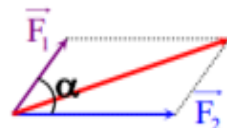
+ $\vec{F}_1 \uparrow \downarrow \vec{F}_2 \Rightarrow F = F_{\text{LỚN}} - F_{\text{NHỎ}}$ ($\vec{F}$ cùng chiều $\vec{F}_{\text{LỚN}}$)



+ $\vec{F}_1 \perp \vec{F}_2 \Rightarrow F = \sqrt{F_1^2 + F_2^2}$ ($\vec{F}$ là đường chéo hình bình hành)



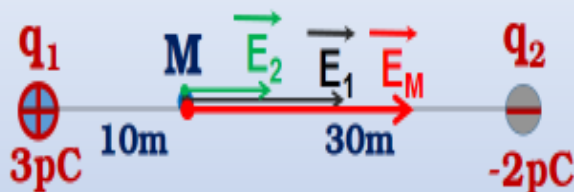
$$\Rightarrow F = \sqrt{F_1^2 + F_2^2 + 2F_1.F_2.\cos\alpha}$$



BÀI TẬP: ĐIỆN TRƯỜNG

$$E = 9.10^9 \frac{|q|}{\epsilon.r^2}$$

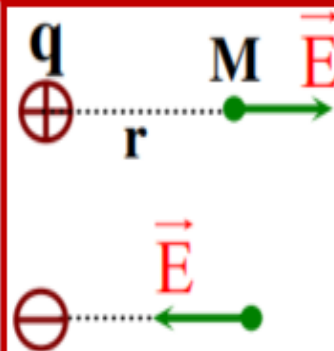
BT1: Cho hình vẽ. Tìm E_M



$$E_1 = 9.10^9 \frac{|q_1|}{\epsilon.r_1^2} = 9.10^9 \frac{|3.10^{-12}|}{1.0,1^2} = 2,7 \text{ (V/m)}$$

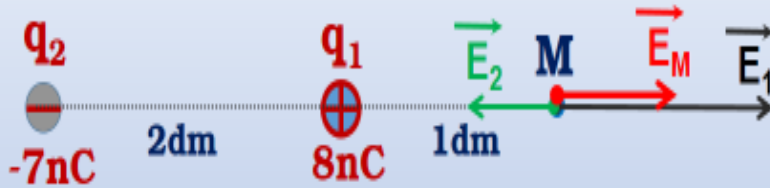
$$E_2 = 9.10^9 \frac{|q_2|}{\epsilon.r_2^2} = 9.10^9 \frac{|-2.10^{-12}|}{1.0,3^2} = 0,2 \text{ (V/m)}$$

$\vec{E}_M = \vec{E}_1 + \vec{E}_2$ Tổng 2 vectơ $\uparrow \uparrow$ $E_M = E_1 + E_2 = 2,7 + 0,2 = 2,9 \text{ (V/m)}$



BÀI TẬP: ĐIỆN TRƯỜNG

BT2: Cho hình vẽ. Tìm E_M

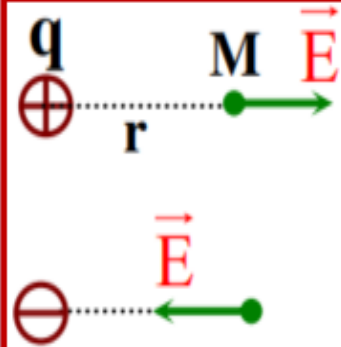


$$E_1 = 9 \cdot 10^9 \frac{|q_1|}{\epsilon \cdot r_1^2} = 9 \cdot 10^9 \frac{|8 \cdot 10^{-9}|}{1,0,1^2} = 7200 \text{ (V/m)}$$

$$E_2 = 9 \cdot 10^9 \frac{|q_2|}{\epsilon \cdot r_2^2} = 9 \cdot 10^9 \frac{|-7 \cdot 10^{-9}|}{1,0,3^2} = 700 \text{ (V/m)}$$

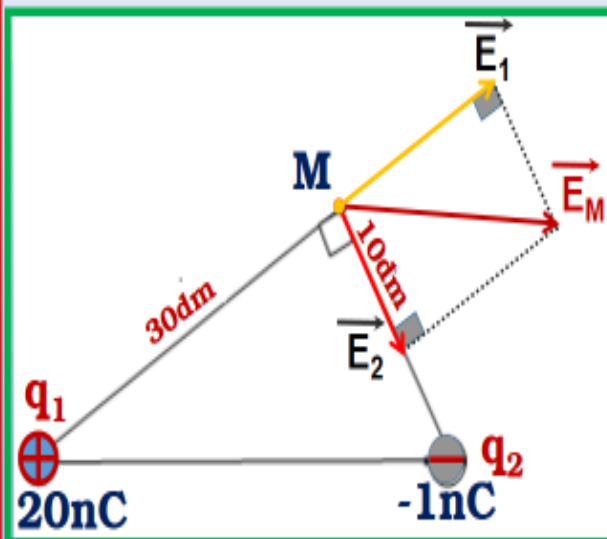
$$\vec{E}_M = \vec{E}_1 + \vec{E}_2 \xrightarrow{\text{Tổng 2 vecto} \updownarrow} \boxed{E_M = E_1 - E_2 = 7200 - 700 = 6500 \text{ (V/m)}}$$

$$E = 9 \cdot 10^9 \frac{|q|}{\epsilon \cdot r^2}$$



BÀI TẬP: ĐIỆN TRƯỜNG

BT3: Cho hình vẽ. Tìm E_M

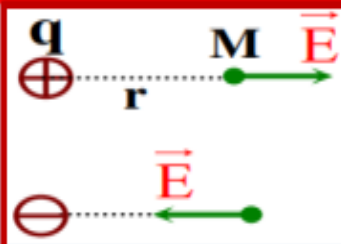


$$E_1 = 9 \cdot 10^9 \frac{|20 \cdot 10^{-9}|}{1,3^2} = 20 \text{ (V/m)}$$

$$E_2 = 9 \cdot 10^9 \frac{|-1 \cdot 10^{-9}|}{1,1^2} = 9 \text{ (V/m)}$$

$$\vec{E}_M = \vec{E}_1 + \vec{E}_2 \xrightarrow{\text{Pitago } \Delta \perp} \boxed{E_M^2 = E_1^2 + E_2^2 = ? \text{ (V/m)}} \Rightarrow \boxed{E_M = \sqrt{\dots} \text{ (V/m)}}$$

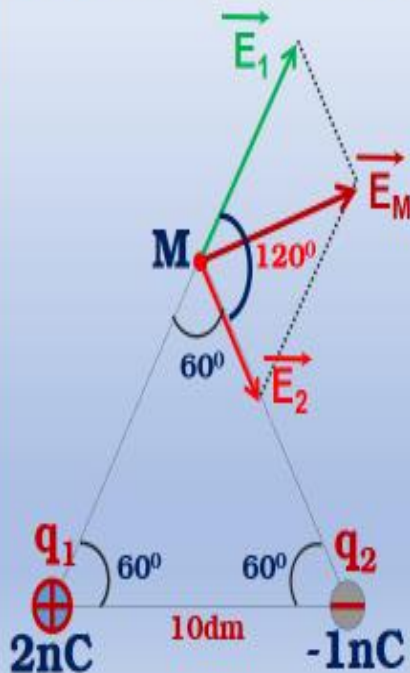
$$E = 9 \cdot 10^9 \frac{|q|}{\epsilon \cdot r^2}$$



☀ BÀI TẬP: ĐIỆN TRƯỜNG ☀

$$E = 9.10^9 \frac{|q|}{\epsilon.r^2}$$

BT4: Cho hình vẽ. Tìm E_M



$$E_1 = 9.10^9 \frac{|2.10^{-9}|}{1.1^2} = 18 \text{ (V/m)}$$

$$E_2 = 9.10^9 \frac{|-1.10^{-9}|}{1.1^2} = 9 \text{ (V/m)}$$

$$\vec{E}_M = \vec{E}_1 + \vec{E}_2 \quad \text{Định lí cos } \Delta \text{ thường}$$

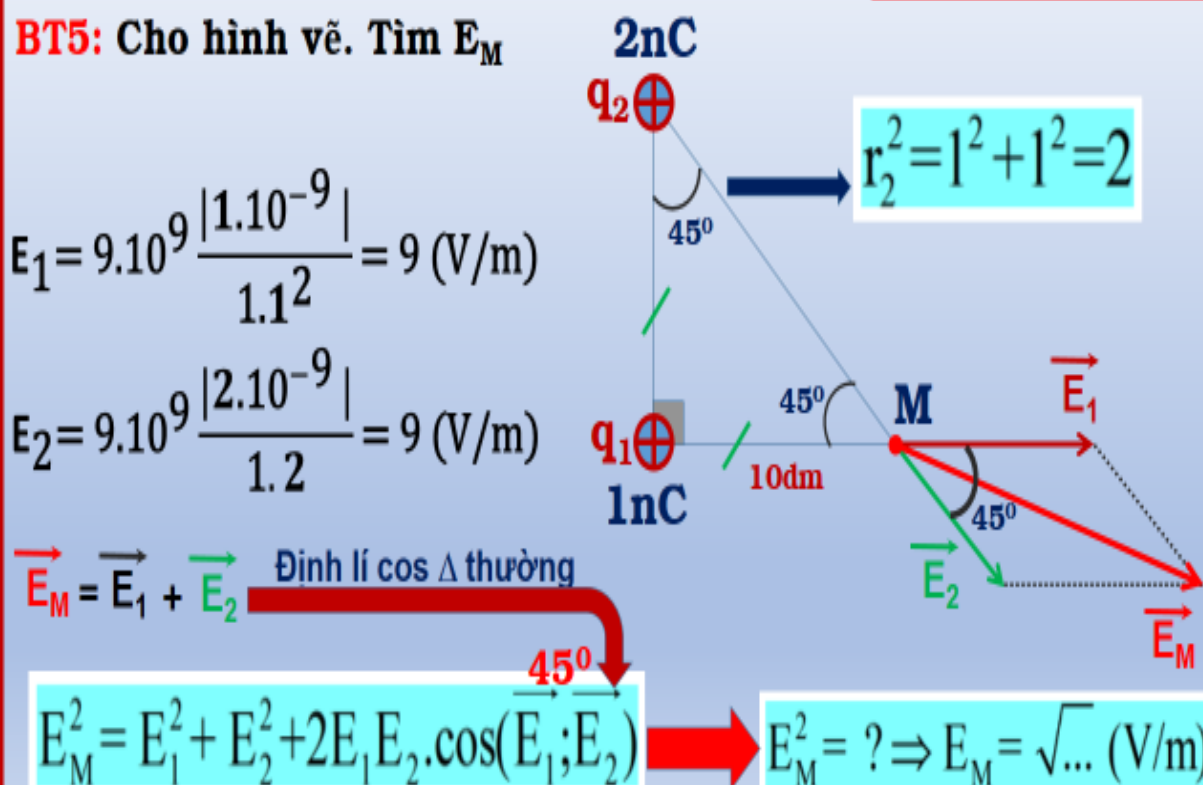
$$E_M^2 = E_1^2 + E_2^2 + 2E_1E_2 \cdot \cos(\vec{E}_1; \vec{E}_2)$$

$$\Rightarrow E_M^2 = ? \Rightarrow E_M = \sqrt{\dots} \text{ (V/m)}$$

☀ BÀI TẬP: ĐIỆN TRƯỜNG ☀

$$E = 9.10^9 \frac{|q|}{\epsilon.r^2}$$

BT5: Cho hình vẽ. Tìm E_M



$$E_1 = 9.10^9 \frac{|1.10^{-9}|}{1.2^2} = 9 \text{ (V/m)}$$

$$E_2 = 9.10^9 \frac{|2.10^{-9}|}{1.2^2} = 9 \text{ (V/m)}$$

$$\vec{E}_M = \vec{E}_1 + \vec{E}_2 \quad \text{Định lí cos } \Delta \text{ thường}$$

$$E_M^2 = E_1^2 + E_2^2 + 2E_1E_2 \cdot \cos(\vec{E}_1; \vec{E}_2) \Rightarrow E_M^2 = ? \Rightarrow E_M = \sqrt{\dots} \text{ (V/m)}$$

BÀI TẬP: ĐIỆN TRƯỜNG

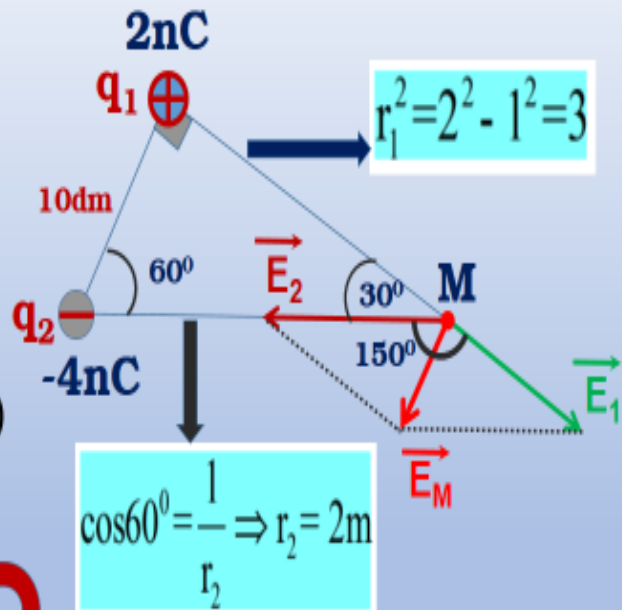
$$E = 9.10^9 \frac{|q|}{\epsilon.r^2}$$

BT6: Cho hình vẽ. Tìm E_M

$$E_1 = 9.10^9 \frac{|2.10^{-9}|}{1.3} = 6 \text{ (V/m)}$$

$$E_2 = 9.10^9 \frac{|-4.10^{-9}|}{1.2^2} = 9 \text{ (V/m)}$$

$$\vec{E}_M = \vec{E}_1 + \vec{E}_2 \quad \text{Định lí cos } \Delta \text{ thường}$$



$$E_M^2 = E_1^2 + E_2^2 + 2E_1E_2 \cdot \cos(\vec{E}_1; \vec{E}_2) \quad \Rightarrow \quad E_M^2 = ? \Rightarrow E_M = \sqrt{\dots} \text{ (V/m)}$$

BÀI TẬP: ĐIỆN TRƯỜNG

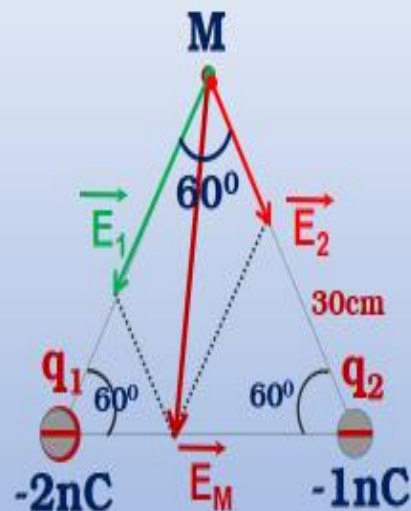
$$E = 9.10^9 \frac{|q|}{\epsilon.r^2}$$

BT7: Cho hình vẽ. Tìm E_M

$$E_1 = 9.10^9 \frac{|-2.10^{-9}|}{1.0,3^2} = 200 \text{ (V/m)}$$

$$E_2 = 9.10^9 \frac{|-1.10^{-9}|}{1.0,3^2} = 100 \text{ (V/m)}$$

$$\vec{E}_M = \vec{E}_1 + \vec{E}_2 \quad \text{Định lí cos } \Delta \text{ thường}$$



$$E_M^2 = E_1^2 + E_2^2 + 2E_1E_2 \cdot \cos(\vec{E}_1; \vec{E}_2) \quad \Rightarrow \quad E_M^2 = ? \Rightarrow E_M = \sqrt{\dots} \text{ (V/m)}$$

BÀI TẬP: ĐIỆN TRƯỜNG

$$E = 9.10^9 \frac{|q|}{\epsilon.r^2}$$

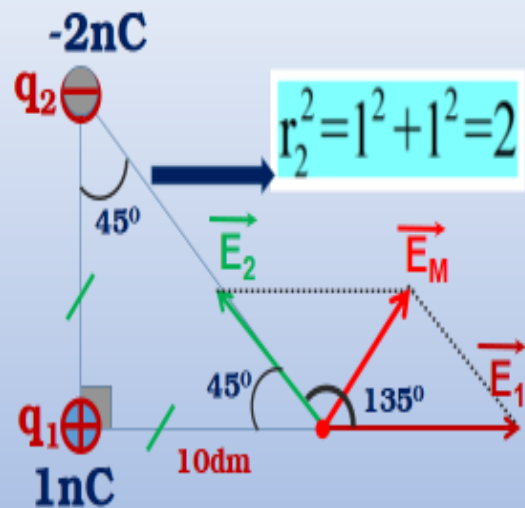
BT8: Cho hình vẽ. Tìm E_M

$$E_1 = 9.10^9 \frac{|1.10^{-9}|}{1.1^2} = 9 \text{ (V/m)}$$

$$E_2 = 9.10^9 \frac{|-2.10^{-9}|}{1.2^2} = 9 \text{ (V/m)}$$

$$\vec{E}_M = \vec{E}_1 + \vec{E}_2 \quad \text{Định lí cos } \Delta \text{ thường}$$

$$E_M^2 = E_1^2 + E_2^2 + 2E_1E_2 \cdot \cos(E_1; E_2) \quad \xrightarrow{135^\circ} \quad E_M^2 = ? \Rightarrow E_M = \sqrt{\dots} \text{ (V/m)}$$



BÀI TẬP:

$$E = 9.10^9 \frac{|q|}{\epsilon.r^2}$$

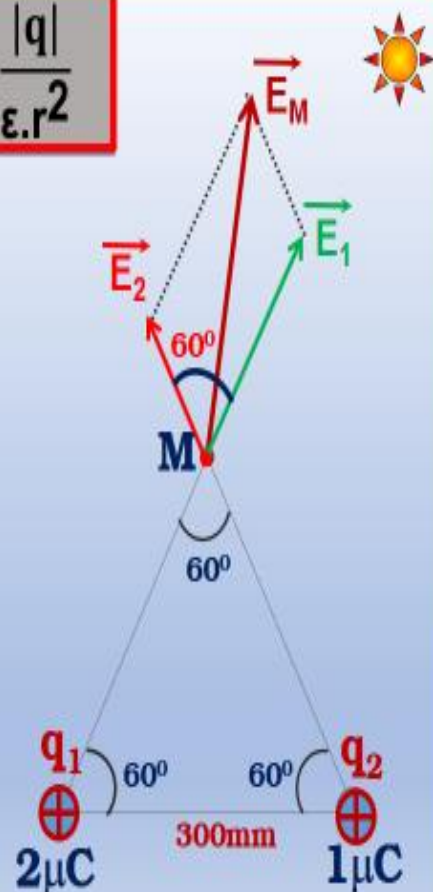
BT9: Cho hình vẽ. Tìm E_M

$$E_1 = 9.10^9 \frac{|2.10^{-6}|}{1.0,3^2} = 200000 \text{ (V/m)}$$

$$E_2 = 9.10^9 \frac{|1.10^{-6}|}{1.0,3^2} = 100000 \text{ (V/m)}$$

$$\vec{E}_M = \vec{E}_1 + \vec{E}_2 \quad \text{Định lí cos } \Delta \text{ thường}$$

$$E_M^2 = E_1^2 + E_2^2 + 2E_1E_2 \cdot \cos(E_1; E_2) \quad \xrightarrow{60^\circ}$$



BÀI TẬP: ĐIỆN TRƯỜNG

$$E = 9.10^9 \frac{|q|}{\epsilon.r^2}$$

BT10: Cho hình vẽ. Tìm E_M

$$E_1 = 9.10^9 \frac{|-1.10^{-9}|}{1.1^2} = 9 \text{ (V/m)}$$

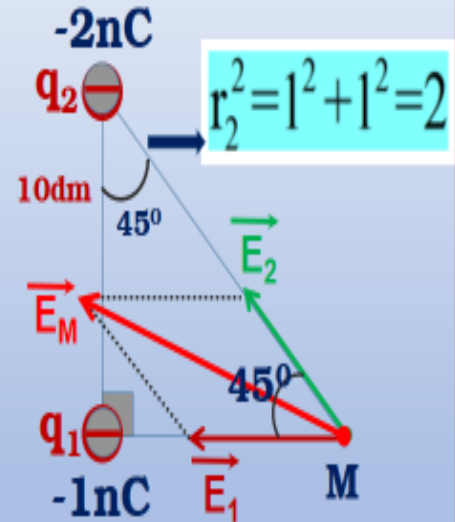
$$E_2 = 9.10^9 \frac{|-2.10^{-9}|}{1.2^2} = 9 \text{ (V/m)}$$

$$\vec{E}_M = \vec{E}_1 + \vec{E}_2 \quad \text{Định lí cos } \Delta \text{ thường}$$

45°

$$E_M^2 = E_1^2 + E_2^2 + 2E_1E_2 \cdot \cos(\vec{E}_1; \vec{E}_2)$$

$$E_M^2 = ? \Rightarrow E_M = \sqrt{\dots} \text{ (V/m)}$$



BÀI TẬP: ĐIỆN TRƯỜNG

$$E = 9.10^9 \frac{|q|}{\epsilon.r^2}$$

BT11: Cho hình vẽ. Tìm E_M

