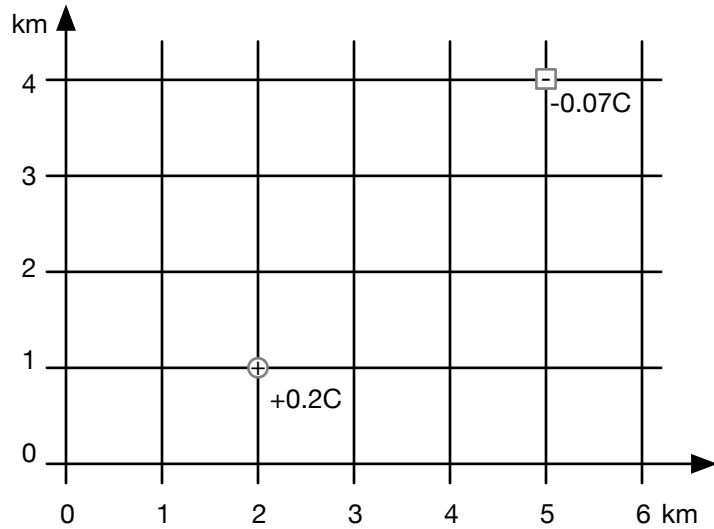


There are two charges located as shown, position is given in **kilometers**.

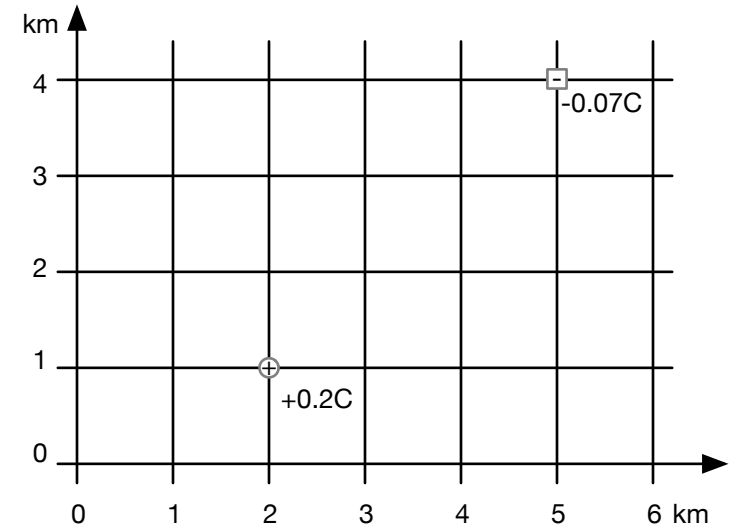
- (a) Compute the magnitude of the force on the  $-0.07\text{C}$  charge caused by the  $+0.2\text{C}$  charge.  
 (b) Draw an arrow on the diagram showing the direction of this force.



$$k = 9.0 \times 10^9 \text{N} \cdot \text{m}^2/\text{C}^2 = 9000 \text{N} \cdot \text{km}^2/\text{C}^2.$$

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(c)

$$\begin{aligned} F &= k \frac{|q| |Q|}{r^2} \\ &= k \frac{|q| |Q|}{r_x^2 + r_y^2} \\ &= \left( 9000 \frac{\text{N} \cdot \text{km}^2}{\text{C}^2} \right) \frac{(0.2\text{C})(0.07\text{C})}{(3.0\text{km})^2 + (3.0\text{km})^2} = 7.0\text{N} \end{aligned}$$

