

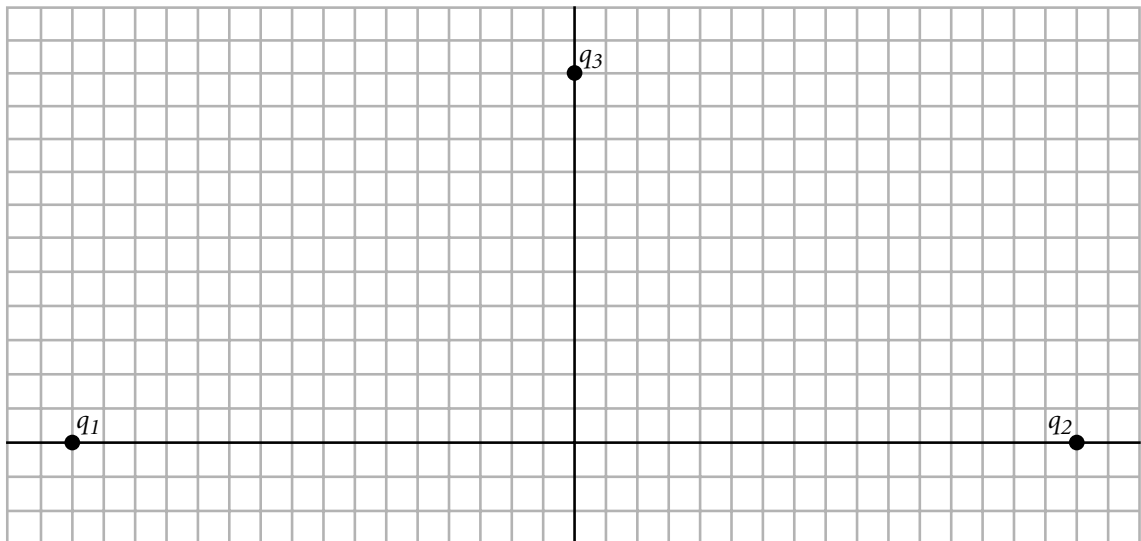
Section
17-2

HOLT PHYSICS
Math Skills

Electric Force

Use $k_C = 8.99 \times 10^9 \text{ N}\cdot\text{m}^2/\text{C}^2$.

1. Two point charges, q_1 and q_2 , of $4.00 \mu\text{C}$ each, are placed -16.0 cm and 16.0 cm away from the origin on the x -axis. A charge q_3 of $-1.00 \mu\text{C}$ is placed 12.0 cm away from the origin on the y -axis.
 - a. Find the distance from q_3 to q_1 and from q_3 to q_2 _____
 - b. Find the magnitude and the direction of the force F_{13} exerted by q_1 on q_3 . _____
 - c. Find the magnitude and the direction of the force F_{23} exerted by q_2 on q_3 . _____
 - d. Find the magnitude and the direction of the force F_{12} exerted by q_1 on q_2 . _____
 - e. In the space below, sketch the vectors representing forces F_{13} and F_{23} .



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- f. Find the angle between the q_1 - q_3 line and the x -axis. _____
- g. Find the x and y components of forces F_{13} and F_{23} . _____
- h. Find the resultant force of forces F_{13} and F_{23} . _____
- i. If q_3 is released, in which direction will it move? _____