

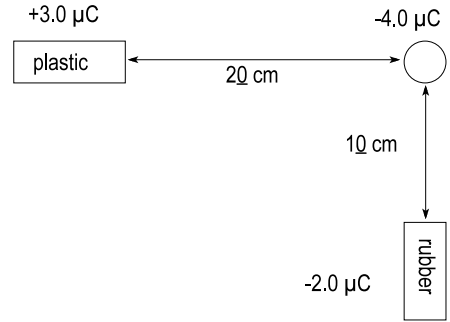
# 14: Electrostatics

## Worksheet B: Quiz Practice

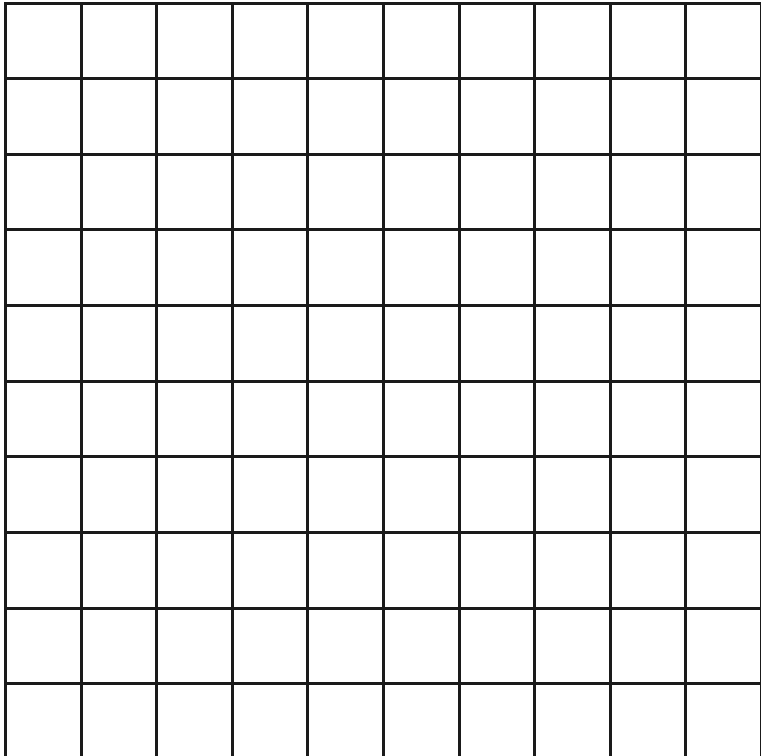
Name \_\_\_\_\_

Inquiry

A rubber rod with a negative  $2.0 \mu\text{C}$  ( $-2.0 \times 10^{-6} \text{ C}$ ) charge is  $10 \text{ cm}$  south of a pith ball with a negative charge of  $4.0 \mu\text{C}$ . A plastic rod with a positive  $3.0 \mu\text{C}$  charge is  $20 \text{ cm}$  west of the pith ball.



- Use Coulomb's Law to find the magnitude of the electric force between the rubber rod and the pith ball. **SHOW ALL WORK**  
( $k = 9.00 \times 10^9 \text{ Nm}^2/\text{C}^2$ )
- What is the compass direction of the rubber rod's push/pull on the pith ball? \_\_\_\_\_
- Use Coulomb's Law to find the magnitude of the electric force between the plastic rod and the pith ball. **SHOW ALL WORK**
- What is the compass direction of the plastic rod's push/pull on the pith ball? \_\_\_\_\_
- Use the centimeter axes below to sketch and add the force vectors on the pith ball. Indicate the scale you are using and indicate the size and direction of the resultant force vector.  
**MAKE SURE EACH VECTOR, INCLUDING THE RESULTANT, HAS AN ARROWHEAD**



Scale:  
Each box equals \_\_\_\_\_ N

Resultant force in Newtons:  
\_\_\_\_\_

Resultant direction:  
(specify degrees and compass headings)  
\_\_\_\_\_

**ANSWERS**  
 1. 7.2 N  
 2. North  
 3. 2.7 N  
 4. West  
 5. 7.7 N at 70° N of W