

NAME \_\_\_\_\_  
PERIOD \_\_\_\_\_

PHYSICS QUIZ #36D  
ELECTRIC FIELDS - CONTINUOUS

For the following problem showing ALL work is critical. I will be evaluating your answer primarily on the process that you use to reach the answer!

A charge of  $q_1 = 125 \mu\text{C}$  is spread evenly along the length of a piece of wire that is  $L = 22.0 \text{ cm}$  long as shown to the right.

1. What will be the charge density per unit length  $\lambda$  for this straight wire? [3 pts]
2. What will be the direction and magnitude of the electric field at point  $P_1$  which is located  $x_1 = 12.0 \text{ cm}$  from the midpoint of the wire as shown question [6 pts]
3. What will be the direction and magnitude of the electric field at point  $P_2$  which is located  $y_1 = 12.0 \text{ cm}$  from the end of the wire as shown? [6 pts]

