Q1 = + 4 μC   12.5 cm   Q2 = +10 μC
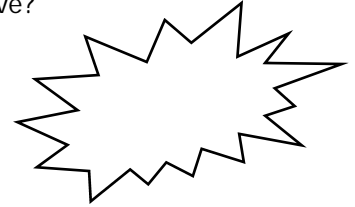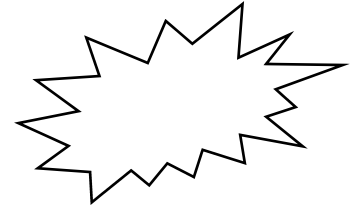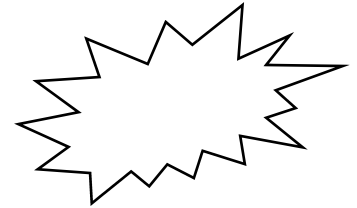
4.2 cm

Point A

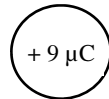1. What is the magnitude of the electric force between Q1 and Q2 in the diagram above?

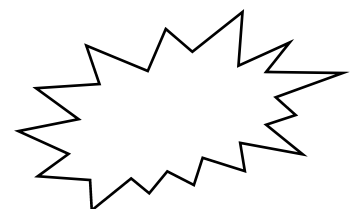2. What is the magnitude of the E-field due to **Q1** at **Point A**?

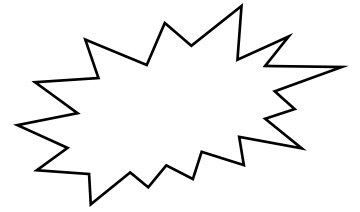3. What is the electric potential at **Point A**?

4. Draw the E-field around the charge shown below.

+ 9 μC

5. A charge of −4 μC exerts an attractive force of 4.20 E 3 N on a second charge that is 35 mm away. What is the magnitude of the second charge?

6. At a certain location around a charged particle there is a force of 1.81 E −15 N acting on a magnesium nucleus (Atomic number 12). What is the magnitude of the E-field at that location?

7. What is the electric potential at a point 70 μm from a boron nucleus (Atomic number 5)?
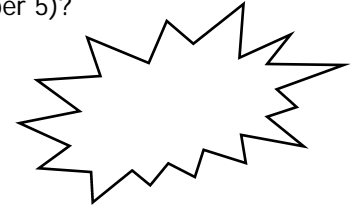
8. How close can a proton moving at 1.4 E 7 m / s get to a stationary 45 μC charge before coming to a stop?
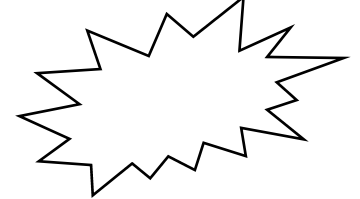
9. Three point charges, q_1, q_2 , and q_3 lie along the x-axis as shown in the picture below. How far from q_1 would q_3 need to be placed in order for it to feel no resultant electric force?

$q_1 = $ -2 μC $\qquad\qquad\qquad\qquad\qquad\qquad q_2 = $ -7 μC

$\bigoplus$ ←————— 12 cm ————→ $\bigoplus$

←———— ? m ———— $\bigoplus$

$q_3 = $ +2 μC
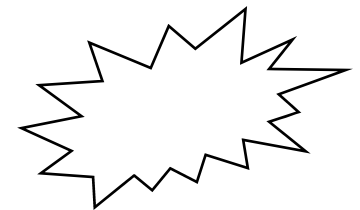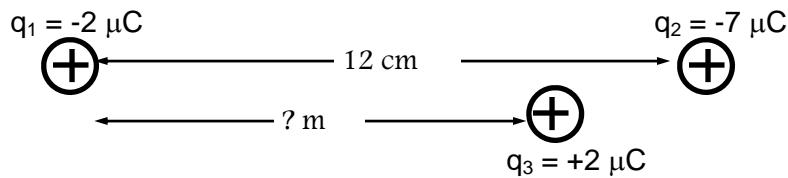
Part of the test will be multiple choice part problem solving. You also need to review your notes and the online notes as there will be a number of conceptual problems.