Electric Field Strength...

...is defined as the force per unit charge on a positive test charge(q) in an electric field.

$$\vec{E} = \frac{\vec{F}}{q} \left(\frac{N}{C}\right) \qquad g = \frac{N}{Kg}$$

1. An electron experiences a force of 0.75N when near a second charge. What is the field strength at this position?

2. What gravitational field strength does a school bus experience on the surface of the earth?

...at one earth radius above the earth?

3. A test charge of 208.7 x 10^{-6}C is place in an electric field of 5.72 x 10^{3} N/C. What is the force exerted on this test charge?

Electric field strength can also be calculated using...

$$E = \frac{kQ}{d^2}$$

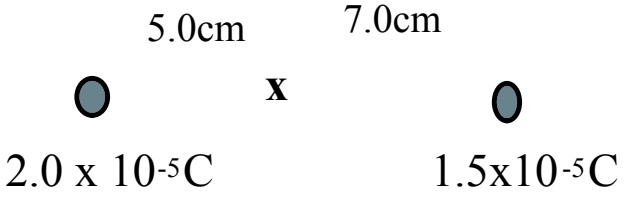
This is the electric field strength anywhere around charge Q

derive...

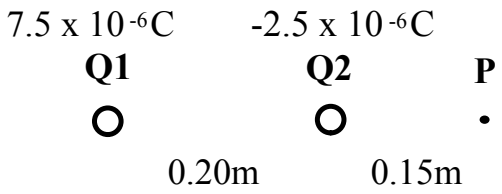
4. What is the magnitude of the electric field strength 2.40m away from a 2.40 microcoulomb point charge?

5. At what distance from a charge of 3.1×10^{-5} C would the field strength be 3.44×10^{-4} N/C?

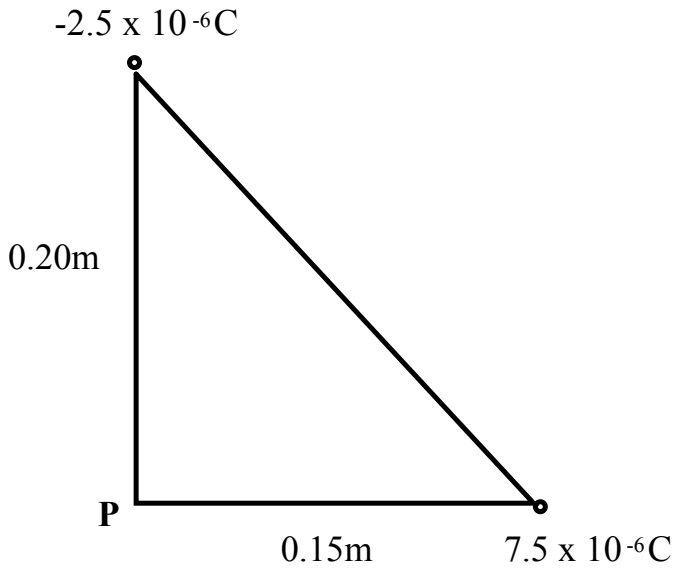
6. What is the electric field intensity at point x?



7. Charges Q1 and Q2 are arranged as shown. What is the electric field strength at point P?



8. What is the electric field strength at point P?



9. What is the electric field strength at the center of the square?