**Noteguide for Field Theory - Videos 16E Name**

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| **Gravitational** | **Electrical** |
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| Field:  g - gravitational field strength (N/kg)  F - force exerted by field on the mass (N)  m - the mass (kg)    g - g near a point mass toward mass (N/kg)  G - 6.67x10-11 Nm2kg-2  M - the mass (kg)  r - distance from the point mass (m) | Field:  E - electric field strength (N/C)  F - force exerted by field on charge (N)  q - the charge (C)  (not in data packet)  E - E near a point charge away from charge (N/C)  k - 8.99x109 Nm2C-2  q - the charge (C)  r - distance from the point charge (m) |

Example 1 - A +125 μC charge experiences a force to the right of 0.0175 N. What is the Electric field, and its direction?

Example 2 - An electron travels through a region where there is a downward electric field of 325 N/C. What force in what direction acts on the electron, and what is its acceleration?

Whiteboards - Work these out - if you don't get the right answer, watch the video to see how to do it.

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| 1.Ishunta Dunnit notices that a charge of -125 μC experiences a force of 0.15 N to the right. What is the electric field and its direction? (1200 N/C left) | 2. Doan Botherme places a +12 mC charge into an upward 160 N/C electric field. What force in what direction does it experience? (1.9 N up) |
| 3.Alfred O. Dadark is on a planet where a mass of 0.12 kg experiences a downward force of 7.80 N. What is the gravitational field on the surface of this planet? (65 N/kg down) | 4. Telly Vishun places an unknown charge into a known upward electric field of 612 N/C, and the charge experiences a downward force of .851 N. What is the charge? (-1.39 mC) |
| 5. Sal F. Hone levitates a 0.00125 kg ball with an upward electric field of 590 N/C. What is the charge on the ball?  (Hint gravity = electrical force) (+20.8 μC)  Eq = mg | |