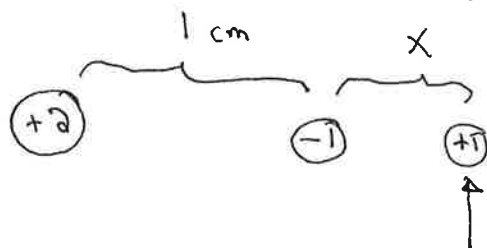


ASG VOL 3 Ex G.3 (Equilibrium of charges)



The third charge must be placed to the right of the -1 charge. How far? At a distance x , which obeys the equation

$$\frac{2}{(1+x)^2} = \frac{1}{x^2}$$

$$2x^2 = 1 + x^2 + 2x$$

$$x^2 - 2x - 1 = 0$$

$$x = 1 \pm \sqrt{2} = 2.41 \text{ or } -0.41$$

The physically meaningful solution is

$$x = 2.41 \text{ cm}$$