

5(a)	work done per unit charge
	work (done) moving positive charge from infinity (to the point)
5(b)(i)	potential (due to proton) = $(1.60 \times 10^{-19}) / (4\pi \times 8.85 \times 10^{-12} \times 10 \times 10^{-12})$
	or
	potential (due to electron) = $(-1.60 \times 10^{-19}) / (4\pi \times 8.85 \times 10^{-12} \times 110 \times 10^{-12})$
	$V = [(1.60 \times 10^{-19}) / (4\pi \times 8.85 \times 10^{-12})] \times [(10^{-1} - 110^{-1}) \times 10^{12}] = 130 \text{ V}$
5(b)(ii)	$V = [(1.60 \times 10^{-19}) / (4\pi \times 8.85 \times 10^{-12})] \times [(30^{-1} - 90^{-1}) \times 10^{12}]$
	= (+) 32 V
5(b)(iii)	cross drawn midway between the electron and the proton
5(b)(iv)	line from (10, +130) to (110, -130)
	curve getting shallower until $x = 60 \text{ pm}$, crossing $V = 0$ at (60, 0) and then getting steeper after $x = 60 \text{ pm}$
	curve passing through (30, ± 32) and (90, ± 32)