

9(a)	emission of electrons (from a metal surface)
	when electromagnetic radiation is incident (on surface)
9(b)(i)	threshold frequency = $2F$
9(b)(ii)	Planck constant = ϕ / F
9(c)	two diagonal straight lines with positive gradient in the positive E_k region only, starting at non-zero values of f
	line labelled X passing through $(F, 0)$ and line labelled Y passing through $(2F, 0)$ and extending to $3F$ or $+2\phi$
	two diagonal straight lines with equal gradients
	X line extrapolates back to $(0, -\phi)$ and Y line extrapolates back to $(0, -2\phi)$

9(a)	emission of electrons (from a metal surface)
	when electromagnetic radiation is incident (on surface / electrons)
9(b)(i)	current falls to zero when applied voltage equals energy per unit charge of emitted electrons
	energy of photon depends on frequency
	maximum energy of electron depends on energy of photon
9(b)(ii)	<i>Any three points from:</i> - threshold frequency = 1.5×10^{15} Hz - threshold wavelength = 2.0×10^{-7} m - work function = 6.2 eV (or 9.9×10^{-19} J) - Planck constant = 6.6×10^{-34} J s (not 6.63×10^{-34} J s) - number per unit time (of photons / electrons) = $1.7 \times 10^{16} \text{ s}^{-1}$ (in stage 1) - power of incident radiation = 0.028 W (in stage 1)