Question number			Answer	Notes	Marks
13	(a)	(i)	substitution / rearrangement; final value for volume; final value for time; e.g. 8 x 200 = V x 1 V = 1600 (litres) time = 100 (minutes)	($p_1V_1 = p_2V_2$) – no mark as given on page 2. No credit for merely quoting the equation. Allow 99 minutes (i.e. assumption that the final 16 litres not available)	3
		(ii)	Any **two** suitable points, e.g. MP1. pressure decreases as depth decreases; MP2. reference to p = h g; MP3. reference to pV equation (if temperature constant); MP4. additional bubbles join together as they rise; MP5. temperature increases nearer surface;		2
13	(b)	(i)	displacement method described; measure water displaced (with measuring cylinder); OR measure radius / diameter / circumference; calculate volume (with equation);		2
		(ii)	not a fair test; change of temperature / volume;	ignore 'each pump will have different pressure'	2

Total 9 marks