Question number			Answer	Notes	Marks
3	(a)	(i)	power = voltage x current;	Accept rearrangements and symbols e.g. current = power ÷ voltage, P=IV, I=P/V ignore a triangle mnemonic an eqn in units	1
		(ii)	2.9 (A);	Accept 2.92 (A), 2.916 (A)	1
	(b)	(i)	Any **three** of : MP1. if current gets too high/exceeds 13A or a set value; MP2. fuse (wire) melts / breaks; MP3. breaking circuit / switching off; MP4. prevents cable over heating;	allow: fuse blows stops current /flow of electrons	3
		(ii)	any **one** of: MP1. cable can't be fully extended; MP2. limits the use of the extension cable; MP3. can't exceed 1200 W; MP4. can't reach 10.0 (A) / max working value/eq; **AND** (because otherwise) 5 A fuse will blow/ will cut the power;	allow RA ignore vague comments re energy or power being too much or too high	2
		(iii)	(to prevent) the cable overheating/OWTTE;		1

Total 8 marks

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