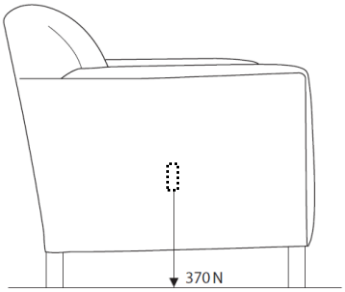
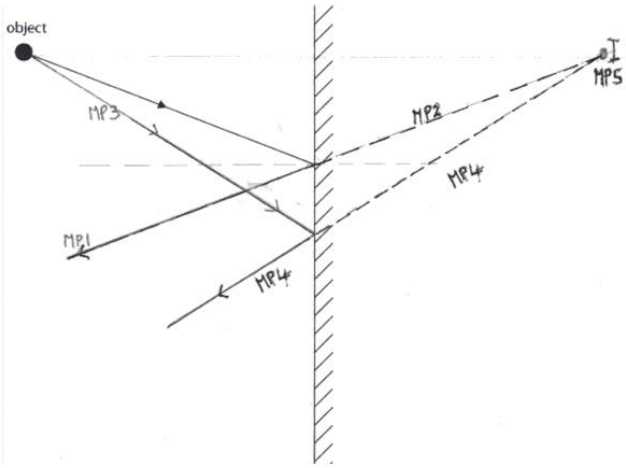
Question number	Answer	Notes	Marks
6 a	X drawn at the base of the weight arrow within area shown by the dashed box;  		1
b (i)	pressure = force ÷ area;	allow rearrangements and standard symbols e.g. p=F/A	1
(ii)	weight on each foot OR total area found; substitution; evaluation; matching unit; e.g. force on each foot = 92.5 (N) OR total area = 20.8 (cm^2) (pressure =) 92.5 / 5.2 OR 370 / 20.8 (pressure =) 18 N/cm^2	allow 92.5 or 20.8 seen anywhere in working allow any valid unit of pressure if no valid working seen 17.788…, 17.8 allow 10^4 Pa or 10^4 N/m^2 ignored factor of 4 gives 71 N/cm^2 gains 3 marks used 5.2^2 for area gives 3.4 N/cm^2 gains 3 marks used 5.2^2 for area and ignored factor of 4 gives 13.7 N/cm^2 gains 2 marks	4
c	MP1. (cups) increase (surface) area; MP2. force (on floor) remains the same; MP3. (since p=F/A) pressure (on floor) is decreased;	ignore ‘force is more spread out’ / eq	3

Total for question 6 = 9 marks

Question number	Answer	Notes	Marks
7 a (i)	moment = force x (perpendicular) distance;		1
(ii)	correct distance used; substitution; rearrangement; evaluation; e.g. distance = 40 (cm) 4.8 = force x 0.4 (force =) 4.8/0.4 (force =) 12 (N)	apply ecf if wrong distance chosen -1 for POT error 0.12, 16, 9.6 gain 3 marks 0.16, 0.096 gain 2 marks	4
b	use a longer spanner / apply force a greater distance from the {bolt / pivot} / apply a larger force; idea that force / distance needs to be 2x greater;	allow applying force at right angles to the spanner e.g. 12N applied at 80cm or 24N applied at 40cm	2

Total for question 7 = 7 marks

Question number	Answer	Notes	Marks
8 a	any four from: MP1. original ray reflected from mirror with i=r; MP2. reflected ray projected back behind the mirror along the same line; MP3. second ray drawn from the object to the mirror; MP4. second ray reflected correctly and projected back behind the mirror (such that it intersects the original ray projection); MP5. image labelled where the rays intersect;  	rays drawn do not need arrows judge reflection angle by eye line does not need to be dashed line does not need to be dashed allow this mark even if the intersection is in front of the mirror	4
b	virtual;	allow lateral inversion / imaginary / object'	1

Total for question 8 = 5 marks