

Question	Answer	Marks	AO Element	Notes	Guidance
1	method for averaging answers 90/2	C1			
	125 (mm) for both	A1			(allow only one mark if no working but both stated as equal OR given equal but incorrect values)
2	water would squirt out / not dense enough / tube would need to be (very) long (so not practical)	B1			accept not very dense, less dense than mercury
3(a)	greater pressure from man OR man will fall through ice OR ice will break / crack	B1			
3(b)	idea of increasing area OR spreading load	M1			

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	any three from: larger (surface) area Load/weight/force more spread out less pressure use of $P = F / A$	A3			
4(a)	755 (1) mm Hg (1)	2			
4(b)	vacuum	1			
5	760(.0) + 100(.0) (1) 860 (mm Hg) (1)	2		accept 760(.0) - 100(.0) for 1 mark	
6(a)	vacuum	1			
6(b)	atmospheric / air (1) pressure (1)	2			
7(a)	$P = F \div A$ in any form (1) $120 \div 0.5$ (1) $240 \text{ (N/cm}^2\text{)} (1)$	3			
7(b)	less (than)	1			

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8	(skis have) large (surface) area (1) (so) less pressure (on snow / ground) (1)	2			
9(a)	(mercury) <u>barometer</u>	1			
9(b)	vacuum OR nothing	1			
9(c)	a value less than 760 mm (Hg) and greater than 0 mm (Hg)	1			
10(a)	manometer	1			
10(b)	760 - 280 (1) 480 (mm Hg) (1)	2			
10(c)	(level A) up AND (level B) down	1			
11	$P = F \div A$ OR $(F=) P \times A$ in any form (1) $20\,000 \times 0.09$ (1) 1800 (N) (1)	3			

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12(a)	<u>tyre B</u> <u>larger / bigger surface area</u> less pressure (on ground) / weight distributed	3			
12(b)	molecules gain kinetic energy / move faster more (frequent) / harder collisions (with tyre) increased / greater pressure (on tyre)	3			
13	barometer	1			
14	density (of sea water) depth (of sea water) (in either order)	2			
15	D - ρgh	1			
16	C	1			
17	greater <u>because</u> LH level lower OR RH level pushed up OR attempt at explaining in terms of greater force on LH column pushes it down more	B1			

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18	A	1			
[Total: 45]					