

Question number	Answer	Notes	Marks
10 (a)	<p>use of $p = h \times \text{density} \times g$;</p> <p>conversion of 57 cm into 0.57 m;</p> <p>evaluation;</p> <p>e.g. pressure difference = $57 \times 820 \times 10$ pressure difference = $0.57 \times 820 \times 10$ (pressure difference =) 4700 (Pa)</p>	<p>allow mark if formula on its own is seen in working</p> <p>allow use of $g = 9.8, 9.81$ 470 000, 467 000, 467 400, 458 052, 458 519.4 etc. score 2 marks</p> <p>allow 4670, 4674, 4580.52, 4585.194 etc.</p>	3
(b) (i)	<p>substitution into $W = m \times g$;</p> <p>evaluation;</p> <p>correct unit;</p> <p>e.g. $W = 24 \times 10$ (W =) 240 newtons / N</p>	<p>no mark for formula on its own allow use of $g = 9.8, 9.81$ -1 for POT error e.g. incorrectly changing kg to g mark independently</p> <p>allow 235.2, 235.44</p>	3
(ii)	<p>substitution into $p = F/A$;</p> <p>evaluation;</p> <p>e.g. $p = 240 / 1.2$ (p =) 200 (Pa)</p>	<p>no mark for formula on its own allow ecf from (i)</p>	2
(iii)	<p>substitution into $p = F/A$;</p> <p>rearrangement;</p> <p>evaluation;</p> <p>e.g. $200 = F / 4.8$ $F = 200 \times 4.8$ (F =) 960 (N)</p>	<p>no mark for formula on its own allow ecf from (ii)</p>	3
(c)	<p>GPE of piston X = decrease;</p> <p>GPE of piston Y = increase;</p> <p>chemical energy of piston Y = no change;</p> <p>kinetic energy of piston Y = no change;</p>	<p>allow marks if the meaning is clear e.g. allow +, ↑ for increase etc.</p>	4

Total for Question 10 = 15 marks