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Question 9 (Answer: **A**)

- Pressure in a liquid depends only on depth, density and g – not on the shape of the container.
- Both contain the same liquid to the same depth d.
- So the pressure at the base is the same in each, even though the flask holds less water.

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Question 9 (Answer: **B**)

- Pressure in a liquid is ρgh, so it rises with both depth and density.
- Both beakers are filled to the same depth, so the densities decide it.
- Water is denser than oil, so the greatest pressure is at the *bottom* of the water.

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4(a)(i)	170 (cm^3)
	pV = constant **OR** $1.0 \times 10^5 \times 240 = 1.4 \times 10^5 \times V_2$
	(V_2 =) $\{1.0 \times 10^5 \times 240\} / 1.4 \times 10^5$ **OR** 1.7×10^N
4(a)(ii)	270 N
	(F =) pA **OR** (F =) $1.4 \times 10^5 \times 1.9 \times 10^{-3}$
4(a)(iii)	(W =) Fd in words or symbols
	7.9 J
4(b)	distance between gas particles is much larger (than distance between liquid particles) **OR** particles in liquid are touching **AND** particles in gas are far apart owtte

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Question 9 (Answer: **D**)

- The two carts weigh the same, so the *force* pressing on the ground is the same.
- Pressure is force divided by area, so a larger contact area gives a lower pressure.
- Wide wheels therefore exert less pressure and sink in less.

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Question 11 (Answer: **C**)

- Pressure in a liquid is $p = \rho gh$, so it is *proportional* to the depth.
- A proportional relationship plots as a straight line.
- That line must also pass through the origin, since at zero depth the liquid exerts no pressure.

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Question 13 (Answer: **D**)

- Pressure due to a liquid column is $p = \rho gh$.
- Here $\rho = 1000$ kg/m^3 and $h = 15$ m.
- $p = 1000 \times 10 \times 15 = 150\,000$ Pa.