

Q	Marking Instructions	AO	Marks	Typical Solution
8(a)	Reads graph and uses $10^{\log P}$ or $10^{\log V}$ to get either $P$ or $V$	AO3.4	M1	$\log_{10} P = 2.18$ $P = 151$
	Correctly obtains $P$ and $V$ AWRT 150 and AWRT 0.71	AO1.1b	A1	$\log_{10} V = -0.15$ $V = 0.708$
(b)	Calculates value of gradient to find $d$ Condone use of $\log d = \text{gradient}$ Or uses a value of $c$ plus a $P/V$ pair to find $d$	AO3.4	M1	$\log_{10} P = \log_{10} c + d \log_{10} V$
	Obtains correct value for $d$ AWRT $-1.4$ Not necessarily a decimal	AO1.1b	A1	Gradient = $d = -1.4$
	Calculates value of intercept to find $\log_{10} c$ Or uses a value of $d$ plus a $P/V$ pair to find $c$	AO3.4	M1	Intercept = $\log_{10} c$
	Calculates correct value for $c$ AWRT 93	AO1.1b	A1	$c = 93.3$
(c)	Uses their values of $c$ and $d$ in the formula $P = cV^d$	AO1.1a	M1	$P = 93.3 \times 2^{-1.4}$
	Obtains $P$ value, <b>including units</b> AWFW 30 to 40	AO3.2a	A1	= 35.4 kilopascals
	<b>Total</b>		<b>8</b>	