AS Maths Key Skills Check 3

CM

Name: _____

1. Express $\sqrt{\frac{1}{16x^5}}$ in the form ax^b where a and b are constants to be determined	$\frac{1}{4}x^{-\frac{5}{2}}$
2. Find, in ascending powers of x, the first four terms in the expansion of $(3-2x)^9$.	$19683-118098x+314928x^2-489888x^3+...$
3. The points A and B have position vectors $7\mathbf{i}+2\mathbf{j}$ and $2\mathbf{i}-5\mathbf{j}$ respectively. (a) Find $\overrightarrow{AB}$ (b) Find $\lvert\overrightarrow{AB}\rvert$	(a) $\overrightarrow{AB}=-5\mathbf{i}-7\mathbf{j}$ (b) $\lvert\overrightarrow{AB}\rvert=\sqrt{74}$
4. Solve the equation $3e^x+2e^{-x}=7$. Give your answers in the form $\ln k$	Multiply by e^x to get a 3TQ and (use the substitution $y=e^x$ if you like) to obtain $x=\ln 2$ or $x=\ln\left(\frac{1}{3}\right)$