**10** The first three terms, in descending powers of $x$, in the expansion of $\left(3x^2 - a\right)^n \left(1 + \frac{1}{x^2}\right)^2$ can be written as $729x^{12} + 972x^{10} + bx^8$, where $a$, $b$ and $n$ are constants.

Find the values of $a$, $b$ and $n$. [9]

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