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3 Find the exact value of the term independent of x in the expansion of $\left(2+\frac{3}{x^2}\right)^{10}\left(1-4x^2\right)^2$. [6]

4 Variables x and y are such that when e^y is plotted against x^3, a straight-line graph is obtained.

This line passes through the points (1, 13.5) and (7.5, 0.5).

(a) Find y in terms of x. [4]

(b) Find the values of x for which your equation is valid. [2]

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