3 Find the values of k for which the equation $4x^2 - k = 4kx - 2$ has no real roots. [4]

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4 **(a)** Write $3+4\log_2 a-\log_2 b$ as a single base 2 logarithm. [3]

(b) Solve the equation $\lg x = 4\log_x 10$. [4]

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