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Explanation in colloquial English:
The limit as x approaches 4 of $x^2 - 2x - 8$ over $x - 4$ is equal to the limit of $(x - 4)(x + 2)$ over $(x - 4)$, which equals the limit of $(x + 2)$, so the limit is 6.

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Translation from colloquial English to improper mathematical notation:
$\lim_{x \to 4} \dfrac{x^2 - 2x - 8}{x - 4} = \lim \dfrac{(x-4)(x+2)}{x-4} = \lim(x+2)$. $\lim = 6$.