Projeto Mathematical Ramblings

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Encontre $\lim_{t\to -2} \dfrac{\sqrt{3t^2-8}+t}{2t+4}$.

Resolução:

$$\frac{\sqrt{3t^2-8}+t}{2t+4} = \frac{\sqrt{3t^2-8}+t}{2t+4} \cdot \frac{\sqrt{3t^2-8}-t}{\sqrt{3t^2-8}-t} =$$
$$= \frac{2t^2-8}{(2t+4)(\sqrt{3t^2-8}-t)} = \frac{(2t-4)(t+2)}{2(t+2)(\sqrt{3t^2-8}-t)} =$$
$$= \frac{2t-4}{2(\sqrt{3t^2-8}-t)}$$

Logo $\lim_{t\to -2} \dfrac{\sqrt{3t^2-8}+t}{2t+4} = \lim_{t\to -2} \dfrac{t-2}{\sqrt{3t^2-8}-t} = \boxed{-1}$

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