

2. Evaluate the limit

$$\lim_{x \rightarrow -b} \frac{x^2 + 3x - 18}{x + b}$$

we know that $x \neq -b$ because that would lead to

0/0 (indeterminate form) so we can remove this discontinuity via simplification

$$\frac{x^2 + 3x - 18}{x + b} = \frac{(x-3)(\cancel{x+b})}{(\cancel{x+b})} = x-3$$

$$\lim_{x \rightarrow -b} x-3 = -b-3 = -9$$