

Exp) Determine the value of  $a$  that makes  $f(x)$  cont. at  $x = -1$

$$f(x) = \begin{cases} \frac{x^2 + 3x + 2}{x+1}, & x \neq -1 \\ a, & x = -1 \end{cases}$$

3 conditions

1)  $f(-1) = a$

2)  $\lim_{x \rightarrow -1} f(x)$

$$\lim_{x \rightarrow -1^-} f(x) = \lim_{x \rightarrow -1^+} f(x)$$

$$\lim_{x \rightarrow -1} \left( \frac{(x+2)(x+1)}{x+1} \right) = \frac{0}{0}$$

3)  $1) = 2)$

$$\lim_{x \rightarrow -1} (x+2) \stackrel{\text{DSP}}{=} -1+2 = 1$$

$$\boxed{a = 1}$$