

$$f(x) = \frac{3x}{x+2} - \frac{5}{x+4} \Rightarrow$$

§ 2.3 #42

$$f\left(\frac{5}{3}\right) = \frac{3\left(\frac{5}{3}\right)}{\frac{5}{3}+2} - \frac{5}{\frac{5}{3}+4}$$

$$= \frac{5}{\frac{5}{3}+\frac{6}{3}} - \frac{5}{\frac{5}{3}+\frac{12}{3}} = \frac{5}{\frac{11}{3}} - \frac{5}{\frac{17}{3}}$$

$$= \left(\frac{5}{1}\right)\left(\frac{3}{11}\right) - \left(\frac{5}{1}\right)\left(\frac{3}{17}\right) = \frac{15}{11} - \frac{15}{17} = \cancel{\left(\frac{15}{11}\right)\left(\frac{11}{11}\right)}$$

$$= \frac{(15)(17)}{(11)(17)} - \frac{(15)(11)}{(17)(11)} = \frac{255}{187} - \frac{165}{187} = \frac{90}{187}$$

I think maybe you saw the

$\frac{15}{11} - \frac{15}{17}$ and took it for

$$\frac{15}{11} - \frac{15}{11} \text{ ?}$$