Exercise 32

Arithmetic Operations Perform the indicated operations.

(a) $\dfrac{2}{\frac{2}{3}} - \dfrac{\frac{2}{3}}{2}$ **(b)** $\dfrac{\frac{2}{5}+\frac{1}{2}}{\frac{1}{10}+\frac{3}{15}}$

Solution

Part (a)

$$\frac{2}{\frac{2}{3}} - \frac{\frac{2}{3}}{2}$$

$$2 \times \frac{1}{\frac{2}{3}} - \frac{2}{3} \times \frac{1}{2}$$

$$2 \times \frac{3}{2} - \frac{2}{3} \times \frac{1}{2}$$

$$3 - \frac{1}{3}$$

$$3 \times \frac{3}{3} - \frac{1}{3}$$

$$\frac{9}{3} - \frac{1}{3}$$

$$\frac{9-1}{3}$$

$$\frac{8}{3}$$

Part (b)

$$\frac{\frac{2}{5}+\frac{1}{2}}{\frac{1}{10}+\frac{3}{15}}$$

$$\frac{\frac{2}{5}+\frac{1}{2}}{\frac{1}{10}+\frac{1}{5}}$$

$$\frac{\frac{2}{5} \times \frac{2}{2} + \frac{1}{2} \times \frac{5}{5}}{\frac{1}{10} + \frac{1}{5} \times \frac{2}{2}}$$

$$\frac{\frac{4}{10}+\frac{5}{10}}{\frac{1}{10}+\frac{2}{10}}$$

$$\frac{\frac{4+5}{10}}{\frac{1+2}{10}} = \frac{\frac{9}{10}}{\frac{3}{10}} = \frac{9}{10} \times \frac{1}{\frac{3}{10}} = \frac{9}{10} \times \frac{10}{3} = 3$$