

Exercise 32

Arithmetic Operations Perform the indicated operations.

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

Solution**Part (a)**

$$\begin{aligned} & \frac{2}{\frac{2}{3}} - \frac{2}{\frac{3}{2}} \\ & 2 \times \frac{1}{\frac{2}{3}} - \frac{2}{3} \times \frac{1}{\frac{1}{2}} \\ & 2 \times \frac{3}{2} - \frac{2}{3} \times \frac{1}{\frac{1}{2}} \\ & 3 - \frac{1}{3} \\ & 3 \times \frac{3}{3} - \frac{1}{3} \\ & \frac{9}{3} - \frac{1}{3} \\ & \frac{9-1}{3} \\ & \frac{8}{3} \end{aligned}$$

Part (b)

$$\begin{aligned} & \frac{\frac{2}{5} + \frac{1}{2}}{\frac{1}{10} + \frac{3}{15}} \\ & \frac{\frac{2}{5} + \frac{1}{2}}{\frac{1}{10} + \frac{1}{5}} \\ & \frac{\frac{2}{5} \times \frac{2}{2} + \frac{1}{2} \times \frac{5}{5}}{\frac{1}{10} + \frac{1}{5} \times \frac{2}{2}} \\ & \frac{\frac{4}{10} + \frac{5}{10}}{\frac{1}{10} + \frac{2}{10}} \\ & \frac{\frac{4+5}{10}}{\frac{1+2}{10}} = \frac{\frac{9}{10}}{\frac{3}{10}} = \frac{9}{10} \times \frac{10}{3} = \frac{9}{10} \times \frac{10}{3} = 3 \end{aligned}$$