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$$(a) \quad \frac{x}{y} + \frac{y}{x} = \frac{x^2}{xy} + \frac{y^2}{xy} = \frac{x^2 + y^2}{xy}$$

$$(b) \quad \frac{\cos t}{\sin t} + \frac{\sin t}{\cos t} = \frac{\cos^2 t}{\cos t \sin t} + \frac{\sin^2 t}{\cos t \sin t} = \frac{\cos^2 t + \sin^2 t}{\cos t \sin t} = \frac{1}{\cos t \sin t} = \sec t \csc t$$