

**One number is 5 times another. The sum of their reciprocals is  $\frac{2}{5}$ . Determine the smaller number.**

**Answer 1**

Answer: so  $x=5y$   
reciprocal of  $x=1/x$  then

sum of reciprocals means  $1/x+1/y=2/5$

substitute  $x=5y$  for  $x$  in  $1/x+1/y=2/5$  and get

$$1/5y+1/y=2/5$$

multiply  $1/y$  by  $5/5$  to make it  $5/5y$  so you can add since the denominators (bottom number) are the same

$$1/5y+5/5y=2/5$$

$$6/5y=2/5$$

multiply both sides by  $5y$

$$6=2y$$

divide both sides by 2

$$3=y$$

put this into  $x=5y$  so

$$x=5(3)$$

$$x=15$$

$$y=3$$

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