Exercise 1A

Question 4:

Let $x = \frac{1}{5}$ and $y = \frac{1}{4}$

Then, x < y because $\frac{1}{5} < \frac{1}{4}$

A rational number between $\frac{1}{5}$ and $\frac{1}{4}$ is

$$\frac{\frac{1}{5}+\frac{1}{4}}{2} = \frac{\frac{9}{20}}{2} = \frac{9}{40}$$

Therefore, we have $\frac{1}{5} < \frac{9}{40} < \frac{1}{4}$

Now, a rational number lying between $\frac{1}{5}$ and $\frac{9}{40}$ is

$$\frac{\frac{1}{5}+\frac{9}{40}}{2} = \frac{\frac{17}{40}}{2} = \frac{17}{80}$$

A rational number lying between $\frac{9}{40}$ and $\frac{1}{4}$ is

$$\frac{\frac{9}{40}+\frac{1}{4}}{2} = \frac{\frac{19}{40}}{2} = \frac{19}{80}$$

Therefore, we have $\frac{1}{5} < \frac{17}{80} < \frac{9}{40} < \frac{19}{80} < \frac{1}{4}$

Or we can say that, $\frac{1}{5} < \frac{17}{80} < \frac{9\times2}{40\times2} < \frac{19}{80} < \frac{1}{5}$

That is, $\frac{1}{5} < \frac{17}{80} < \frac{18}{80} < \frac{19}{80} < \frac{1}{4}$

Therefore, three rational numbers between $\frac{1}{5}$ and $\frac{1}{4}$ are

$\frac{17}{80}, \frac{18}{80}$ and $\frac{19}{80}$.

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