

October 10th

$$\frac{1}{m} + \frac{1}{n} = \frac{2}{3}$$

$$\frac{n+m}{mn} = \frac{2}{3}$$

Therefore

$$3n + 3m = 2mn$$

Hence

$$2mn - 3m = 3n$$

Therefore

$$m = \frac{3n}{2n-3}$$

$$n = 2m = 6$$

$$n = 3, m = 3$$

$$n = 6, m = 2$$

are the only 3 pairs to give positive integral values

So possible fractions are

$$\frac{1}{3} + \frac{1}{3} \text{ and } \frac{1}{6} + \frac{1}{2}$$