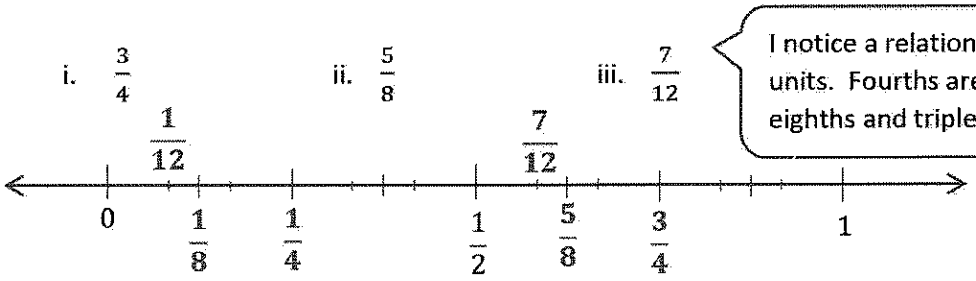
G4-M5-Lesson 12

1.

a. Plot the following points on the number line without measuring.

i. $\frac{3}{4}$ ii. $\frac{5}{8}$ iii. $\frac{7}{12}$



I notice a relationship between the units. Fourths are twice the size of eighths and triple the size of twelfths.

I use benchmark fractions I know to plot twelfths. After marking fourths, I know that 1 fourth is the same as 3 twelfths, so I decompose each fourth into 3 units to make twelfths.

b. Use the number line in part (a) to compare the fractions by writing >, <, or = on the lines.

i. $\frac{3}{4} \_\_>\_\_ \frac{1}{2}$ ii. $\frac{7}{12} \_\_<\_\_ \frac{5}{8}$

c. Explain how you plotted the points in Part (a).

Sample Student Response:

The number line was partitioned into halves. I doubled the units to make fourths. I plotted 3 fourths. I doubled the units again to make eighths. Knowing that 1 half and 4 eighths are equivalent fractions, I simply counted on 1 more eighth to plot 5 eighths. Lastly, I thought about twelfths and fourths. 1 fourth is the same as 3 twelfths. I marked twelfths by partitioning each fourth into 3 units. I plotted 7 twelfths.

2. Compare the fractions given below by writing $<$ or $>$ on the line.

   Give a brief explanation for each answer referring to the benchmarks of $0, \frac{1}{2}$, and/or 1.

   $\frac{5}{8}$ $>$ $\frac{6}{10}$

   Possible student response:

   If I think about eighths, I know that 1 half is equal to 4 eighths. Therefore, 5 eighths is 1 eighth greater than 1 half.

   I also know that 5 tenths is equal to 1 half. 6 tenths is 1 tenth greater than 1 half. Comparing the size of the units, I know that 1 eighth is more than 1 tenth. So, 5 eighths is greater than 6 tenths.