Reasoning and Problem Solving Compare and Order Fractions Less than 1

Developing

1a. Wynter is incorrect. Various answers, for example: She could use a bar model which shows that $\frac{4}{10} < \frac{4}{7}$.

2a. $\frac{2}{6}, \frac{5}{12}$ ($\frac{2}{5}$ is also a possibility but not expected at this stage).

3a. Kyle has put the fractions in descending order. The correct order is $\frac{1}{16}, \frac{7}{16}, \frac{10}{16}, \frac{14}{16}$.

Expected

4a. Luna is incorrect. Various answers, for example: She could use a bar model which shows that $\frac{2}{3} > \frac{2}{9}$ as each third is larger than each ninth.

5a. $\frac{8}{15}, \frac{5}{10}$

6a. Callum has ordered the fractions by the numerators before finding a common denominator. The correct order is $\frac{4}{32}, \frac{7}{32}, \frac{22}{32}, \frac{24}{32}$.

Greater Depth

7a. Fran is correct. Various answers, for example: She could use a division diagram which shows that $\frac{12}{30} = \frac{4}{10}$ and a bar model which shows $\frac{4}{9} > \frac{4}{10}$.

8a. $\frac{8}{12}, \frac{25}{36}, \frac{12}{18}$

9a. Mo has ordered the fractions by their denominators before he has found a common denominator. The correct order is $\frac{1}{5}, \frac{2}{5}, \frac{3}{5}, \frac{4}{5}$.

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Developing

1b. Xin is incorrect. Various answers, for example: He could use a bar model which shows that $\frac{3}{5} > \frac{3}{8}$.

2b. $\frac{3}{9}, \frac{7}{18}$

3b. Holly has ordered the fractions by the numerators. The correct order is $\frac{2}{10}, \frac{3}{10}, \frac{7}{10}, \frac{8}{10}$.

Expected

4b. Yussuf is correct. Various answers, for example: He could use a bar model which shows that $\frac{6}{7} > \frac{6}{8}$ as each seventh is bigger than each eighth.

5b. $\frac{15}{22}, \frac{22}{33}$

6b. Julia has ordered the fractions by denominator before finding a common denominator. The correct order is $\frac{21}{24}, \frac{20}{24}, \frac{18}{24}, \frac{16}{24}$.

Greater Depth

7b. Mallory is incorrect. Various answers, for example: The only common factor of 18 and 32 is 2 and he can't divide the numerators by 2. Instead, he must make both numerators 21 by multiplying $\frac{7}{18}$ by 3. $\frac{21}{54} < \frac{21}{32}$

8b. $\frac{3}{8}, \frac{31}{96}, \frac{37}{96}$

9b. Mildred has ordered the fractions by the numerators before she has found a common denominator. The correct order is $\frac{5}{7}, \frac{4}{7}, \frac{3}{7}, \frac{2}{7}$.