Exercise 4B

2	4,12,16,24
2	2,6,8,12
2	1,3,4,6
2	1,3,2,3
3	1,3,1,3
	1,1,1,1

L. C. M. of 4, 12, 16 and 24 is 48.

$\frac{-3\times12}{4\times12} = \frac{-36}{48}$

$\frac{-5\times4}{12\times4} = \frac{-20}{48}$

$\frac{-7\times3}{16\times3} = \frac{-21}{48}$

$\frac{-9\times2}{24\times2} = \frac{-18}{48}$

Required order: $\frac{-3}{4} < \frac{-7}{16} < \frac{-5}{12} < \frac{-9}{24}$

(iii) $\frac{-3}{10}, \frac{7}{-15}, \frac{-11}{20}, \frac{17}{-30}$

First, we need to convert the negative denominators to make them positive.

$\frac{-3}{10}, \frac{7\times-1}{-15\times-1}, \frac{-11}{20}, \frac{17\times-1}{-30\times-1}$

$\frac{-3}{10}, \frac{-7}{15}, \frac{-11}{20}, \frac{-17}{30}$

5	10,15,20,30
2	2,3,4,6
3	1,3,2,3
3	1,3,1,3
	1,1,1,1

L. C. M of $10, 15, 20, 30 = 60$

$\frac{-3\times6}{10\times6} = \frac{-18}{60}$

$\frac{-7\times4}{15\times4} = \frac{-28}{60}$

$\frac{-11\times3}{20\times3} = \frac{-33}{60}$

$\frac{-17\times2}{30\times2} = \frac{-34}{60}$

Therefore, $\frac{-34}{60} < \frac{-33}{60} < \frac{-28}{60} < \frac{-18}{60}$

i.e. $\frac{-17}{30} < \frac{-11}{20} < \frac{-7}{15} < \frac{-3}{10}$

(iv) $\frac{2}{3}, \frac{3}{4}, \frac{5}{-6}, \frac{-7}{12}$

First, we need to convert the negative denominators to positive ones.

$\frac{2}{3}, \frac{3}{4}, \frac{5\times-1}{-6\times-1}, \frac{-7}{12}$

$\frac{2}{3}, \frac{3}{4}, \frac{-5}{6}, \frac{-7}{12}$

2	3,4,6,12
2	1,2,3,6
3	1,1,3,3
	1,1,1,1

L. C. M of $3, 4, 6, 12 = 12$

$\frac{2\times4}{3\times4} = \frac{8}{12}$

$\frac{3\times3}{4\times3} = \frac{9}{12}$

$\frac{-5\times2}{6\times2} = \frac{-10}{12}$

$\frac{-7\times1}{12\times1} = \frac{-7}{12}$

Therefore, the correct order is $\frac{-5}{6} < \frac{-7}{12} < \frac{2}{3} < \frac{3}{4}$.

********** END **********