Q7. Rewrite the following rational numbers in the simplest form:

(i) $\frac{-8}{6}$ **(ii)** $\frac{25}{45}$

(iii) $\frac{-44}{72}$ **(iv)** $\frac{-8}{10}$

Ans:

(i) $\frac{-8}{6} = \frac{-4 \times 2}{3 \times 2} = \frac{-4}{3}$

(ii) $\frac{25}{45} = \frac{5 \times 5}{9 \times 5} = \frac{5}{9}$

(iii) $\frac{-44}{72} = \frac{-11 \times 4}{18 \times 4} = \frac{-11}{18}$

(iv) $\frac{-8}{10} = \frac{-4 \times 2}{5 \times 2} = \frac{-4}{5}$

Q8. Fill in the boxes with the correct symbol out of >, <, and =

(i) $\frac{-5}{7}\square\frac{2}{3}$ **(ii)** $\frac{-4}{5}\square\frac{-5}{7}$ **(iii)** $\frac{-7}{8}\square\frac{14}{-16}$

(iv) $\frac{-8}{5}\square\frac{-7}{4}$ **(v)** $\frac{1}{-3}\square\frac{-1}{4}$ **(vi)** $\frac{5}{-11}\square\frac{-5}{11}$

(vii) $0\square\frac{-7}{6}$

Ans:

(i)

$$\frac{-5}{7}=\frac{-5\times3}{7\times3}=\frac{-15}{21}$$

$$\frac{2}{3}=\frac{2\times7}{3\times7}=\frac{14}{21}$$

As - 15 < 14,

Therefore, $\frac{-5}{7}\boxed{<}\frac{2}{3}$

(ii)

$$\frac{-4}{5}=\frac{-4\times7}{5\times7}=\frac{-28}{35}$$

$$\frac{-5}{7}=\frac{-5\times5}{7\times5}=\frac{-25}{35}$$

As - 28 < - 25

Therefore, $\frac{-4}{5} \boxed{<} \frac{-5}{7}$

(iii) Here, $\frac{14}{-16} = \frac{7 \times 2}{-8 \times 2} = \frac{7}{-8} = \frac{-7}{8}$

Therefore, $\frac{-7}{8} \boxed{=} \frac{14}{-16}$

(iv)

$\frac{-8}{5} = \frac{-8 \times 4}{5 \times 4} = \frac{-32}{20}$

$\frac{-7}{4} = \frac{-7 \times 5}{4 \times 5} = \frac{-35}{20}$

As - 32 > - 35,

Therefore, $\frac{-8}{5} \boxed{>} \frac{-7}{4}$

(v) $\frac{-1}{3} = \frac{-1 \times 4}{3 \times 4} = \frac{-4}{12}$

$\frac{-1}{4} = \frac{-1 \times 3}{4 \times 3} = \frac{-3}{12}$

As - 4 < - 3,

Therefore, $\frac{-1}{3} \boxed{<} \frac{-1}{4}$

(vi) $\frac{5}{-11} \boxed{=} \frac{-5}{11}$

(vii) $0 \boxed{>} \frac{-7}{6}$

Q9. Which is greater in each of the following?

(i) $\frac{2}{3}, \frac{5}{2}$ **(ii)** $\frac{-5}{6}, \frac{-4}{3}$ **(iii)** $\frac{-3}{4}, \frac{2}{-3}$

(iv) $\frac{-1}{4}, \frac{1}{4}$ **(v)** $-3\frac{2}{7}, -3\frac{4}{5}$

Ans:

(i) $\frac{2}{3}, \frac{5}{2}$

By converting these into like fractions,

$$\frac{2}{3}=\frac{2\times2}{3\times2}=\frac{4}{6}$$
$$\frac{5}{2}=\frac{5\times3}{2\times3}=\frac{15}{6}$$

As $15 > 4$, therefore, $\frac{5}{2}$ is greater.

(ii) $\frac{-5}{6}, \frac{-4}{3}$

$$\frac{-4}{3}=\frac{-4\times2}{3\times2}=\frac{-8}{6}$$

As $-5 > -8$, therefore, $\frac{-5}{6}$ is greater.

(iii)

$$\frac{-3}{4}, \frac{2}{-3}$$

Or, $\frac{-3}{4}, \frac{-2}{3}$

By converting these into like fractions,

$$\frac{-3}{4}=\frac{-3\times3}{4\times3}=\frac{-9}{12}$$
$$\frac{-2}{3}=\frac{-2\times4}{3\times4}=\frac{-8}{12}$$

As $-8>-9$, therefore, $\frac{-2}{3}$ is greater.

(iv) $\frac{-1}{4},\ \frac{1}{4}$

$$\frac{1}{4}>\frac{-1}{4}$$

(v) $-3\frac{2}{7},\ -3\frac{4}{5}$

$$\frac{-23}{7},\ \frac{-19}{5}$$

By converting these into like fractions,

$$\frac{-23}{7}=\frac{-23\times5}{7\times5}=\frac{-115}{35}$$
$$\frac{-19}{5}=\frac{-19\times7}{5\times7}=\frac{-133}{35}$$

As $-115>-133$, therefore, $-3\frac{2}{7}$ is greater.

Q10. Write the following rational numbers in ascending order:

(i) $\frac{-3}{5}, \frac{-2}{5}, \frac{-1}{5}$ **(ii)** $\frac{-1}{3}, \frac{-2}{9}, \frac{-4}{3}$ **(iii)** $\frac{-3}{7}, \frac{-3}{2}, \frac{-3}{4}$

Ans:

(i) $\frac{-3}{5}, \frac{-2}{5}, \frac{-1}{5}$

As $-3 < -2 < -1$,

$\therefore \frac{-3}{5} < \frac{-2}{5} < \frac{-1}{5}$

(ii) $\frac{-1}{3}, \frac{-2}{9}, \frac{-4}{3}$

By converting these into like fractions,

$\frac{-1\times3}{3\times3}, \frac{-2}{9}, \frac{-4\times3}{3\times3}$

$\frac{-3}{9}, \frac{-2}{9}, \frac{-12}{9}$

As $-12 < -3 < -2$,

$\therefore \frac{-4}{3} < \frac{-1}{3} < \frac{-2}{9}$

(iii) $\frac{-3}{7}, \frac{-3}{2}, \frac{-3}{4}$

By converting these into like fractions,

$\frac{-3\times4}{7\times4}, \frac{-3\times14}{2\times14}, \frac{-3\times7}{4\times7}$

$\frac{-12}{28}, \frac{-42}{28}, \frac{-21}{28}$

As $-42 < -21 < -12$,

$\therefore \frac{-3}{2} < \frac{-3}{4} < \frac{-3}{7}$

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