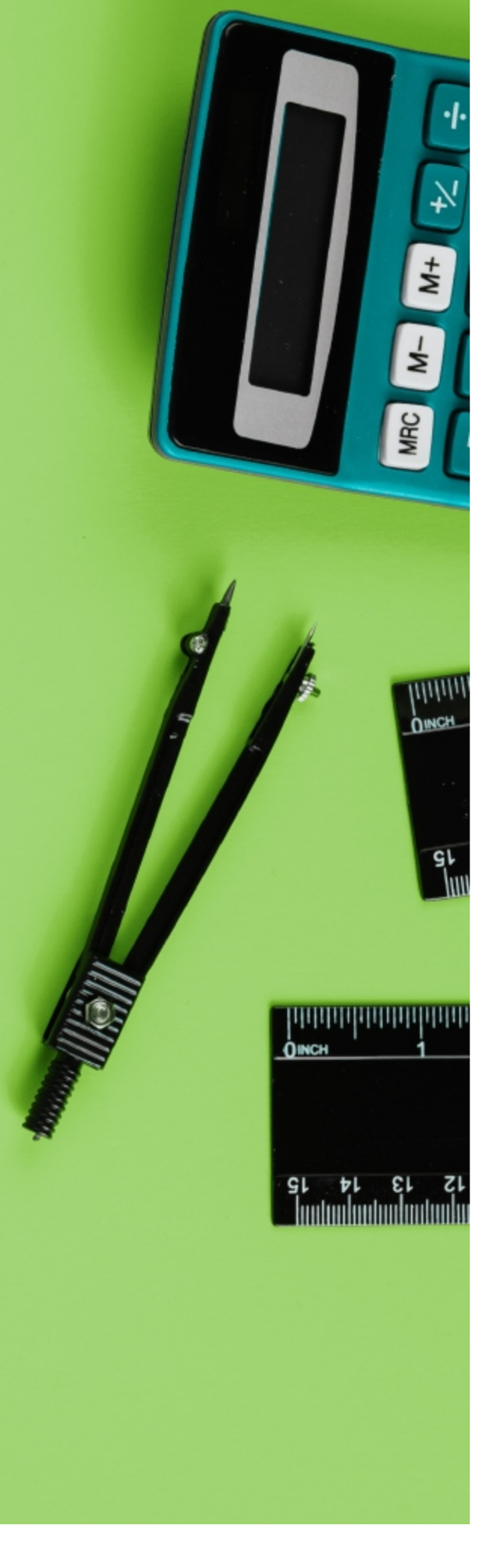
RD Sharma Solutions

Class 7

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Exercise 4.3

Q.1 Determine whether the following rational numbers are in the lowest form or not:

(i) $\frac{65}{84}$ (ii) $-\frac{15}{32}$ (iii) $\frac{24}{128}$ (iv) $\frac{-56}{-32}$

Solution: (i) ∵ 65 and 84 have no common factor other than 1.

$\therefore$ HCF (65, 84) = 1

$\therefore$ $\frac{65}{84}$ is in lowest form.

(ii) 15 and 32 have no common factor other than 1.

$\therefore$ HCF (15, 32) = 1

hence $\frac{15}{32}$ is in lowest form.

(iii) $\frac{24}{128}$, here 24 and 128 have common factor 8.

∵ HCF (24, 128) = 8

$\therefore$ $\frac{24}{128}$ is not in lowest form.

(iv) $\frac{-56}{-32}$, here 56 and 32 have common factor 8

∵ HCF (56, 32) = 8

$\therefore$ $\frac{-56}{-32} = \frac{7}{4}$

$\therefore$ $\frac{-56}{-32}$ is not in lowest form.

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Q.2 Express each of the following rational numbers to the lowest form:

(i) $\frac{4}{22}$ (ii) $\frac{-36}{180}$ (iii) $\frac{132}{-428}$ (iv) $\frac{-32}{-56}$

Solution: (i) In $\frac{4}{22}$

$4 = 2 \times 2$

$22 = 2 \times 11$

$\therefore$ HCF $= 2$

Therefore lowest form $= \frac{4 \div 2}{22 \div 2} = \frac{2}{11}$

(ii) $\frac{-36}{180}$, we have $36 = 2 \times 2 \times 3 \times 3$

$180 = 2 \times 2 \times 3 \times 3 \times 5$

$\therefore$ HCF $= 2 \times 2 \times 3 \times 3 = 36$

hence $\frac{-36 \div 36}{180 \div 36} = \frac{-1}{5}$

$\therefore$ lowest form of $\frac{-36}{180}$ is $\frac{-1}{5}$

(iii) $\frac{132}{-428}$, here $132 = 2 \times 2 \times 3 \times 11$

$428 = 2 \times 2 \times 107$

$\therefore$ HCF $= 2 \times 2 = 4$

$\therefore \frac{132 \div 4}{-428 \div 4} = \frac{33}{-107}$

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(iv) $\frac{-32}{-56} = \frac{32}{56}$

here HCF of $(32, 56) = 8$

$\therefore \frac{+32 \div 8}{+56 \div 8} = \frac{+4}{+7}$

Q3 Fill in the blanks.

(i) $\frac{-5}{7} = \frac{\cdots}{35} = \frac{\cdots}{49}$ (ii) $\frac{-4}{-9} = \frac{\cdots}{18} = \frac{12}{\cdots}$

(iii) $\frac{6}{-13} = \frac{-12}{\cdots} = \frac{24}{\cdots}$ (iv) $\frac{-6}{\cdots} = \frac{3}{11} = \frac{\cdots}{-55}$

Solution: (i) $\frac{-5}{7} = \frac{\cdots}{35}$

Multiplying numerator and denominator by $35 \div 7 = 5$

we get $\frac{-5}{7} \times \frac{5}{5} = \frac{-25}{35}$

also $49 \div 7 = 7$, so Multiplying numerator and denominator by 7, we get

$\frac{-5}{7} \times \frac{7}{7} = \frac{-35}{49}$

hence $\frac{-5}{7} = \frac{-25}{35} = \frac{-35}{49}$

(ii) $\frac{-4}{-9} = \frac{\cdots}{18}$

$\because 18 \div -9 = -2$, so Multiplying numerator and denominator by -2, we get

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$$\frac{-4}{-9} \times \frac{-2}{-2} = \frac{8}{18}$$

Now $\frac{-4}{-9} = \frac{12}{\cdots}$

$\because -4 \times -3 = 12$, so, we get

$$\frac{-4 \times -3}{-9 \times -3} = \frac{12}{27}$$

(iii) $\frac{6}{-13} = \frac{-12}{\cdots} = \frac{24}{\cdots}$

$\because 6 \times -2 = -12$, so multiplying numerator and denominator by -2

$$\frac{6 \times -2}{-13 \times -2} = \frac{-12}{26}$$

also $6 \times 4 = 24$, so

$$\frac{6 \times 4}{-13 \times 4} = \frac{24}{-52}$$

(iv) $\frac{-6}{\cdots} = \frac{3}{11} = \frac{\cdots}{-55}$

here $\because 3 \times -2 = -6$

$$\therefore \frac{3 \times -2}{11 \times -2} = \frac{-6}{-22}$$

also $11 \times -5 = -55$

hence $\frac{3 \times -5}{11 \times -5} = \frac{-15}{-55}$

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