

**EXERCISE 4.3**

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

(i)  $(65/84)$

(ii)  $(-15/32)$

(iii)  $(24/128)$

(iv)  $(-56/-32)$

**Solution:**

(i) Given  $(65/84)$

Here we can observe that 65 and 84 have no common factor their HCF is 1.

Thus,  $(65/84)$  is in its lowest form.

(ii) Given  $(-15/32)$

Here we can observe that -15 and 32 have no common factor i.e., their HCF is 1.

Thus,  $(-15/32)$  is in its lowest form.

(iii) Given  $(24/128)$

Here we can observe that HCF of 24 and 128 is not 1.

Thus, given rational number is not in its simplest form.

(iv) Given  $(-56/-32)$

Here we can observe that HCF of 56 and 32 is 8 and also not equal to 1.

Therefore the given rational number is not in its simplest form.

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

(i)  $(4/22)$

(ii)  $(-36/180)$

(iii)  $(132/-428)$

(iv)  $(-32/-56)$

**Solution:**

(i) Given  $(4/22)$

We know that HCF of 4 and 22 is 2

By dividing the given number by its HCF we get

$$(4 \div 2/22 \div 2) = (2/11)$$

Therefore  $(2/11)$  is the simplest form of the given number

(ii) Given  $(-36/180)$

We know that HCF of 36 and 180 is 36

By dividing the given number by its HCF we get

$$(-36 \div 36/180 \div 36) = (-1/5)$$

Therefore  $(-1/5)$  is the simplest form of the given number

(iii) Given  $(132/-428)$

We know that HCF of 132 and 428 is 4

By dividing the given number by its HCF we get

$$(132 \div 4/-428 \div 4) = (33/-107)$$

Therefore  $(33/-107)$  is the simplest form of the given number

(iv) Given  $(-32/-56)$

We know that HCF of 32 and 56 is 8

By dividing the given number by its HCF we get

$$(-32 \div 8/-56 \div 8) = (4/7)$$

Therefore  $(4/7)$  is the simplest form of the given number

### 3. Fill in the blanks:

(i)  $(-5/7) = (.../35) = (.../49)$

(ii)  $(-4/-9) = (.../18) = (12/...)$

(iii)  $(6/-13) = (-12/...) = (24/...)$

(iv)  $(-6/...) = (3/11) = (.../-55)$

#### Solution:

(i)  $(-5/7) = (-25/35) = (-35/49)$

#### Explanation:

Given  $(-5/7) = (.../35) = (.../49)$

Here  $(-5/7) \times (5/5) = (-25/35)$

And also  $(-5/7) \times (7/7) = (-35/49)$

(ii)  $(-4/-9) = (8/18) = (12/27)$

#### Explanation:

Given  $(-4/-9) = (.../18) = (12/...)$

On multiplying by -2 we get

$$(-4/-9) \times (-2/-2) = (8/18)$$

Also on multiplying by -3

$$(-4/-9) \times (-3/-3) = (12/27)$$

$$(iii) (6/-13) = (-12/26) = (24/-52)$$

**Explanation:**

$$\text{Given } (6/-13) = (-12/26) = (24/-52)$$

On multiplying by -2

$$(6/-13) \times (-2/-2) = (-12/26)$$

Also multiplying by 4

$$\text{And also } (6/-13) \times (4/4) = (24/-52)$$

$$(iv) (-6/-22) = (3/11) = (-15/-55)$$

**Explanation:**

$$\text{Given } (-6/-22) = (3/11) = (-15/-55)$$

On multiplying by -2

$$(3/11) \times (-2/-2) = (-6/-22)$$

And also on multiplying by -5

$$(3/11) \times (-5/-5) = (-15/-55)$$