Rational Numbers: Exercise 9.2

Q.1 Find the sum:

(i) (5/4) + (-11/4) **(ii) (5/3) + (3/5)** **(iii) (-9/10) + (22/15)**

(iv) (-3/-11) + (5/9) **(v) (-8/19) + (-2/57)** **(vi) -2/3 + 0**

(vii) $-2\frac{1}{3}+4\frac{3}{5}$

Sol: Sum:

(i) Given: (5/4) + (-11/4) = (5/4) - (11/4)
= (5-11)/4
= -6/4

By simplifying,
-6/4 = -3/2

(ii) Given: (5/3) + (3/5) =
LCM of 3 and 5 is 15,
(5/3) + (3/5) = {(5×5) + (3×3)}/15
= (25+9)15
= 34/15

(iii) Given: (-9/10) + (22/15)
LCM of 10 and 15 is 30,
(-9/10) + (22/15) = {(-9x3) + (22x2)}/30
= (-27+44)/30
= 17/30

(iv) Given: (-3/-11) + (5/9)
LCM of 9 and 11 is 99,
(3/11) + (5/9) = {(3x9) + (5x11)}/99
= (27+55)/99
= 82/99

(v) Given: (-8/19) + (-2/57)
LCM of 19 and 57 is 57.
-(8/19) - (2/57) = {-(8x3) -2x1}/57
= (-24-2)/57
= -26/57

(vi) Given: -2/3 + 0 = -2/3

(vii) Given: $-2\frac{1}{3}+4\frac{3}{5}$

Firstly, we convert mixed fraction into improper fraction.
-(7/3) + (23/5)
LCM of 3 and 5 is 15,
-(7/3) + (23/5) = {-(7x5)+(23x3)}/15
= (-35 + 69)/15
= 34/15

Q.2 Find:

(i) (7/24) – (17/36) **(ii) (5/63) – (-6/21)** **(iii) (-6/13) – (-7/15)**

(iv) -3/8 – 7/11 **(v)** $-2\frac{1}{9}-6$

Sol:

(i) Given: (7/24) – (17/36)

LCM of 24 and 36 is 72,

(7/24) – (17/36) = {(7x3)-(17x2)}/72

= (21-34)/72

= -13/72

(ii) Given: (5/63) – (-6/21)

LCM of 63 and 21 is 63,

(5/63) + (6/21) = {(5x1) + (6x3)}/63

= (5+18)/63

= 23/63

(iii) Given: (-6/13) – (-7/15)

LCM of 13 and 15 is 195,

-(6/13) + (7/15) = {-(6x15)+(7x13)}/195

= (-90+91)/195

= 1/195

(iv) Given: -3/8 – 7/11

LCM of 8 and 11 is 88,

-3/8 – 7/11 = {-(3x11)-(7x8)}/88

= (-33-56)/88

= -89/88

(v) Given: $-2\frac{1}{9}-6$

Firstly, we convert mixed fraction into improper fraction.

-(19/9)-6

LCM of 9 and 1 is 9,

-(19/9)-6 = {-(19x1)-(6x9)}/9

= (-19-54)/9

= -73/9

Q.3 Find the product:

(i) (9/2) × (-7/4) **(ii) (3/10) × (-9)** **(iii) (-6/5) × (9/11)**

(iv) (3/7) × (-2/5) **(v) (3/11) × (2/5)** **(vi) (3/-5) × (-5/3)**

Sol: **Products:**

(i) Given: (9/2) × (-7/4) = (9 × -7)/(2 × 4)

= -63/8

(ii) Given: (3/10) × (-9) = (3 x-9)/10

= -27/10

(iii) Given: (-6/5) × (9/11) = (-6x9)/(5x11)

= -54/55

(iv) Given: (3/7) × (-2/5) = (3x-2)/(7x5)
= -6/35

(v) Given: (3/11) × (2/5) = (3x2)/(11x5)
= 6/55

(vi) Given: (3/-5) × (-5/3) = (3x-5)/(-5x3)
= -15/-15
= 1

Q.4 Find the value of:
(i) (-4) ÷ (2/3) **(ii) (-3/5) ÷ 2** **(iii) (-4/5) ÷ (-3)**
(iv) (-1/8) ÷ 3/4 **(v) (-2/13) ÷ 1/7** **(vi) (-7/12) ÷ (-2/13)**
(vii) (3/13) ÷ (-4/65)
Sol:
(i) Given: (-4) ÷ (2/3) = (-4) x (3/2)
= (-4x3)/2
= -12/2
= -6

(ii) Given: (-3/5) ÷ 2 = (-3/5) x (1/2)
= (-3x1)/(5x2)
= -3/10

(iii) Given: (-4/5) ÷ (-3) = (-4/5) x (1/-3)
= (-4x1)/(5x-3)
= -4/-15
= 4/15

(iv) Given: (-1/8) ÷ 3/4 = (-1/8) x (4/3)
= (-1x4)/(8x3)
= -4/24
= -1/6

(v) Given: (-2/13) ÷ 1/7 = (-2/13) x (7/1)
= (-2x7)/(13x1)
= -14/13

(vi) Given: (-7/12) ÷ (-2/13) = (-7/12) x (-13/2)
= (7x13)/(12x2)
= 91/24

(vii) Given: (3/13) ÷ (-4/65) = (3/13) x (-65/4)
= (3x-65)/(13x4)
= 195/-52
= -15/4