

22.07.2019

II. Answer any ten questions.

$$16. \frac{-3}{5} \times \frac{2}{2} = -6$$

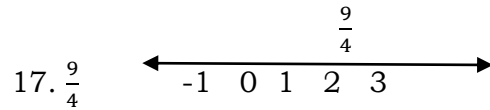
$$\frac{-3}{5} \times \frac{3}{3} = \frac{-9}{15}$$

$$\frac{-3}{5} \times \frac{4}{4} = \frac{-12}{20}$$

$$\frac{-3}{5} \times \frac{5}{5} = \frac{-15}{25}$$

The four rational numbers are

$$\frac{-6}{10}, \frac{-9}{15}, \frac{-12}{20} \text{ and } \frac{-15}{25}$$



$$17. \frac{2}{3} \text{ and } \frac{4}{5}$$

L.C.M of 3 & 5 is 15

$$\frac{2}{3} = \frac{2}{3} \times \frac{5}{5} = \frac{10}{15}$$

$$\frac{4}{5} = \frac{4}{5} \times \frac{3}{3} = \frac{12}{15}$$

$$\therefore \frac{2}{3} < \frac{4}{5}$$

19. Commutative property of Multiplication $axb = bxa$

$$a = \frac{-10}{11} \quad b = \frac{-8}{33}$$

$$axb = \frac{-10}{11} \times \frac{-8}{33} = \frac{80}{363}$$

$$bxa = \frac{-8}{33} \times \frac{-10}{11} = \frac{80}{363}$$

$$\text{L.H.S} = \text{R.H.S} = \frac{80}{363} = \frac{80}{363}$$

\therefore Commutative property of multiplication is verified.

20. Closure property of addition

$a+b$

$$a = \frac{-5}{7} \quad b = \frac{8}{9}$$

$$a+b = \frac{-5}{7} + \frac{8}{9} = \frac{-45+56}{63} = \frac{11}{63}$$

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thus $a+b$ is in Q rational numbers hence closure property is satisfied.

$$21. \frac{2^4}{3^5} \times \frac{2^4}{3^5} = \frac{8}{45}$$

$$22. lxbxh = 4pq^2 \times (3p^2q) \times 4p^3q^3$$

$$= -24p^6q^6$$

$$23. 5x(2y-3) = 10xy - 15x$$

$$24. \frac{25m^3n^2p}{100m^2np} \times 100 = 25mn$$

$$25. -2mn \times (2m)^2 \times -3mn$$

$$= -2mn \times 2^2m^2 \times -3mn$$

$$= -2 \times x^2 \times -3 \times m^{1+2+1}n^{1++}$$

$$= +24m^4n^2$$

$$26. \frac{x^2y^2}{x^2y} = x^{3-2}y^{2-1} = xy$$

27. (i) True (ii) False

28. Area = (2side)² Sq.units

$$a) = (3x^2)^2 m^2$$

$$= 3x^2 \times 3x^2$$

$$= 9x^2$$

$$b) 3x^2 \times (-4x)$$

$$= -12x^3$$

$$29. a = \frac{-1}{2} \quad b = \frac{2}{3} \quad b = \frac{-5}{6}$$

$$\text{L.H.S} \quad a \times (b+c) = \frac{-1}{2} \times \left(\frac{2}{3} + \frac{-5}{6}\right)$$

$$= \frac{-1}{2} \times \frac{4-5}{6} = \frac{-1}{2} \times \frac{-6}{6} = \frac{1}{2}$$

$$\text{R.H.S} \quad (a \times b) + (b \times c) = \frac{-1}{3} + \frac{5}{12} = \frac{-4+5}{12} = \frac{1}{12}$$

L.H.S = R.H.S

Hence associative property is verified

$$30. \frac{4}{5} \times \frac{-3}{8} \times \frac{-3}{8} \times \frac{1}{4} + \frac{19}{20}$$

By associative property $(a \times b) + (a \times c) = a + (a \times c)$

$$b = \frac{4}{5} \quad a = \frac{-3}{8} \quad c = \frac{1}{4}$$

$$\frac{-3}{8} \times \left(\frac{4}{5} + \frac{1}{4}\right) = \frac{-3}{8} \times \frac{16+5}{20}$$

$$\frac{-3}{8} \times \frac{21}{20} = \frac{-63}{160} + \frac{19 \times 8}{20 \times 8} = \frac{63+152}{160} = \frac{89}{160}$$

$$31. \frac{13}{18} \times \frac{-12}{39} = \frac{-2}{9}$$

2

$$\frac{8}{9} \times \frac{-3}{4} = \frac{-2}{3}$$

3

~~12~~ 4

$$\frac{-7}{-9} \div \frac{63}{-36} = \frac{7}{9} \times \frac{-36}{63} = \frac{-4}{9}$$

~~21~~ 7

$$\frac{-2+6-4}{9} = \frac{0}{9} = 0$$

32. Distance = Speed \times time

$$(x+30) \times (y+2)$$

$$= x(y+2) + 30(y+2)$$

$$= xy + 2x + 30y + 60. \text{ Km}$$

$$33. (m^2 - n)(5m^2n^2 - m^2)$$

$$m^2(5m^2n^2 - m^2)$$

$$m^2(5m^2n^2 - m^2) - n(5m^2n^2 - m^2)$$

$$5m^4n^2 - m^4 - 5m^2n^2 + m^2n$$

$$34. \left(\frac{2}{5} + \frac{3}{2}\right) \div \frac{3}{10} = \frac{4+15}{10} \div \frac{3}{10}$$

$$= \div \frac{19 \times \cancel{10}}{10} \div \frac{\cancel{10} \times 19}{3} = 6\frac{1}{3}$$

Hence lies between 6 and 7

35. i) d ii) e iii) b iv) c v) a

36. i) $-3mp$

ii) x, y^2

$$37. 5y^3 - 25y^2 + 8y \div 5y$$

$$a) \frac{\cancel{5}y^3}{\cancel{5}y} - \frac{25y^2}{y} + \frac{\cancel{8}y}{\cancel{5}y}$$

$$= y^{3-1} - 25y^{2-1} + \frac{8}{5}$$

$$= y^2 - 25y + \frac{8}{5}$$

$$b) (2x+5y)(3x-4y) = 2x(3x-4y) + 5y(3x-4y)$$

$$= 6x^2 - 8xy + 15xy - 20y^2$$

$$= 6x^2 - 7xy - 20y^2$$

I. Choose the correct option:

1. b) $\frac{11}{25}$

2. b) 0

3. b) $\frac{-29}{39}$

4. b) $\frac{5}{13}$

5. a) -3

6. b) commutative

7. b) $\frac{-11}{17}$

8. c) $-4a^5b$

9. a) $-2x^2$

10. d) $-9x^5y^6$

11. c) $20x^2y - 20x$

12. a) $9y^2$

13. a) $n^8, 9$

14. b) $-21xy$

15. b) 4