Solution

CLASS 7 MATHEMATICS WORKSHEET 2 (UPTO JULY 2023)

Class 07 - Mathematics

Section A

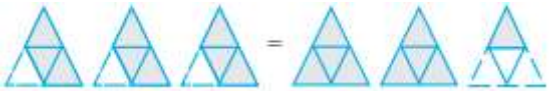
1. **(a)**

Explanation: 

$2 \times \frac{1}{2} = \frac{1}{2} + \frac{1}{2}$ clearly represents the addition of 2 figures out of which each part represents 1 part with dotted lines out of the given 2 equal parts.

2. **(d)** $\frac{1}{3} \times \frac{1}{6}$

Explanation: $\frac{1}{3}$ of $\frac{1}{6} = \frac{1}{3} \times \frac{1}{6}$

3. **(c)** 

Explanation: $3 \times \frac{3}{4}$ clearly represents the addition of 3 figures out of which each part represents 3 shaded parts out of the given 4 equal parts

Also,

$2 \times \frac{1}{4}$represents 2 fully shaded parts and 1 figure having 1 part as shaded out of 4 equal parts

Therefore, $3 \times \frac{3}{4} = 2\frac{1}{4}$

4. **(d)** 150

Explanation: $22.5 \div 0.15 = \frac{225}{10} \times \frac{100}{15} = 150$

5. **(a)** 0.0025

Explanation: Here, 1000 has 3 zeroes

So, point moves 3 places front.

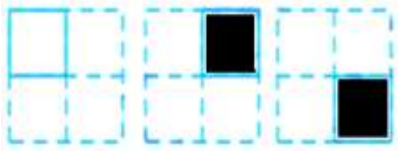
$\frac{2.5}{1000}$

= 0.0025

6. **(b)** $\frac{9}{7}$

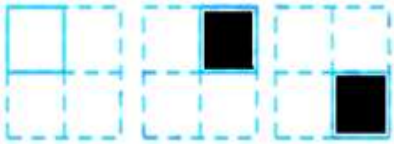
Explanation: Reciprocal = $1 \div \frac{7}{9} = \frac{9}{7}$

7. **(d)**



Explanation: $3 \times \frac{1}{4}$ clearly represents the addition of 3 figures out of which each part represents 1 part

with bold borders out of the given 4 equal parts



Therefore,

$3 \times \frac{1}{4}$ is represented by this option.

8. **(a)** 170

   Explanation: $28.9 \div 0.17 = \frac{289}{10} \times \frac{100}{17} = 17 \times 10 = 170$

9. **(a)** 7

   Explanation: Total length of ribbon = $5\frac{1}{4}$ m = $\frac{21}{4}$ m

   Length of each small pieces = $\frac{\text{Total length}}{\text{Length of one small piece}}$

   $= \frac{21}{4} \div \frac{3}{4} = \frac{21}{4} \times \frac{4}{3} = 7$

10. **(c)** 1.35 liters

    Explanation: Capacity of 1 bottle = (7 - 0.25) ÷ 5 = 6.75 ÷ 5 = 1.35 liters

Section B

11. **(b)** False

    Explanation: False

    As the reciprocal of a proper fraction is an improper fraction.

12. **(a)** True

    Explanation: True,

    Reciprocal of a fraction is obtained by change numerator into denominator and vice-versa.

13. **(a)** True

    Explanation: True

14. 1. 18
15. 1. 0.47
16. 1. 4
17. **(c)** A is true but R is false.

    Explanation: $\frac{2}{3}$ of 8 is same as = $\left(\frac{2}{3}\right) \times 8$

    $\left(\frac{2}{3}\right) \times 8 = 16 = \frac{16}{3}$

    So, (A) is the true statement and (R) is the false statement.

18. **(a)** Both A and R are true and R is the correct explanation of A.

    Explanation: When a whole is divided into equal parts, each part is said to be a fraction of a whole. A fraction represents an equal division of a whole. And $\frac{3}{7}$ is obtained when we divide a whole into seven equal parts and take three parts.

    So, (A) and (R) are the true statement and (R) is the correct reason for (A).

19. **(a)** Both A and R are true and R is the correct explanation of A.

    Explanation: The product of two improper fractions is greater than both fractions.

    $\frac{4}{7} \times \frac{3}{7} = \frac{12}{49}$

    So, (A) and (R) are the true statement and (R) is the correct reason for (A).

20. **(a)** Both A and R are true and R is the correct explanation of A.

    Explanation: $\frac{3}{4} \times 24 = 3 \times 8 = 24$.

Section C

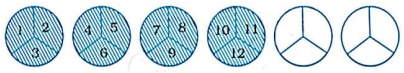
21. $4 \times 6\frac{1}{3} = 4 \times \frac{19}{3} = \frac{4 \times 19}{3} = \frac{76}{3} = 25\frac{1}{3}$
22. $\frac{1}{2}$ of $\frac{6}{7} = \frac{1}{2} \times \frac{6}{7} = \frac{1 \times 6}{2 \times 7} = \frac{6}{14} = \frac{6 \div 2}{14 \div 2} = \frac{3}{7}$

    $\because 3 > 2$

$\therefore \frac{3}{7} > \frac{2}{7}$

$\therefore \frac{1}{2}$ o f $\frac{6}{7} > \frac{2}{3}$ of $\frac{3}{7}$

23. $3 \times 5\frac{1}{5} = 3 \times \frac{26}{5} = \frac{3\times26}{5} = \frac{78}{5} = 15\frac{3}{5}$
24. From the given figure, we have
    There are 12 shaded parts out of 18 parts which can be taken as shown below figure, which means 4 wholes.
    Thus $\frac{2}{3}$ of 6 is 4.



25. We have,
    0.3 ÷ 100
    $= \frac{0.3}{100} = \frac{3}{100\times10} = \frac{3}{1000} = 0.003$
    Note that whenever any decimal number is divided by 10, 100 or 1000 then the decimal point of that number will be shifted towards the left side as many as there are zeros in the number.
26. Let whole homework be denoted as x.
    The part of homework completed by Renu is 2 hours = $\frac{2}{3}$x
    Hence, the part of homework completed by her in 1 hour = $\frac{2}{3}$x + 2 = $\frac{2}{3}x \times \frac{1}{2} = \frac{x}{3}$
    So, the part of homework completed by her in $1\frac{1}{4}$ hours = $\frac{x}{3} \times 1\frac{1}{4} = \frac{x}{3} \times \frac{5}{4} = \frac{5x}{12}$
    Therefore, she completed $\frac{5}{12}$ part of her homework in $1\frac{1}{4}$ hours.
27. Cost of a burger = ₹ $20\frac{3}{4} = ₹\frac{83}{4}$
    Cost of a Macpuff = ₹$15\frac{1}{2} = ₹\frac{31}{2}$
    Thus, Cost of 4 burgers = $₹\left(4 \times \frac{83}{4}\right)$ = ₹ 83
    and cost of 14 macpuffs = $₹\left(14 \times \frac{31}{2}\right)$ = ₹(7 × 31) = ₹217
    Therefore, Cost of 4 burgers and 14 macpuffs = ₹(83 + 217) = ₹300
28. Given that $\frac{1}{16}$ kg chocolates to be filled in 1 box.
    ∴ 1 kg chocolates to be filled in $1 \div \frac{1}{16}$
    = 1 × 16 = 16 boxes.
    Now, $1\frac{1}{2}$ kg chocolates to be filled in $16 \times 1\frac{1}{2} = 16 \times \frac{3}{2}$ = 24 boxes
29. We have,
    432.6 ÷ 100
    $= \frac{432.6}{100} = \frac{4326}{100\times10} = \frac{4326}{1000} = 4.326$
    Note that whenever any decimal number is divided by 10, 100 or 1000 then the decimal point of that number will be shifted towards the left side as many as there are zeros in the number.
30. Given, total number of seats = 820
    Sale of total tickets = 648
    Number of sold tickets guessed by first usher = $\frac{3}{4}$ of 820 = $\frac{3}{4} \times 820 = 615$
    Number of sold tickets guessed by second usher = $\frac{2}{3}$ of 820 = $\frac{2}{3} \times 820$
    $= \frac{1640}{3} = 546.66 \approx 547$
    Since 615 is more close to 648 than 547.
    Therefore the first usher made the better guess.

Section D

31. i. The quantity of water drank by Vidya
    = $\frac{2}{5}$ of 5 litres = $\frac{2}{5} \times 5$ litres
    = $\frac{2\times5}{5}$ litres = $\frac{10}{5}$ litres = 2 litres.
    ii. The quantity of water drank by Pratap
    = 5 litres –2 litres = 3 litres
    ∴ The fraction of the total quantity of water drink by Pratap

$= \frac{\text{Quantity of water drink by Pratap}}{\text{Total quantity of water}}$

$= \frac{3}{5}$

32. i. Here, we have,
$\frac{2}{3} \times \frac{5}{10} = \frac{10}{30}$
Hence, the number in the box will be $\frac{5}{10}$

ii. Here, we have,
The simplest form of $\frac{5}{10}$ is:
$\frac{5}{10} = \frac{1}{2}$

33. The number which is required$= 25\frac{5}{6} \div 6\frac{2}{3}$
$= \frac{155}{6} \div \frac{20}{3}$
$= \frac{155}{6} \times \frac{3}{20}$
$= \frac{31}{8}$
$= 3\frac{7}{8}$
The number is $3\frac{7}{8}$

34. i. Number of small cubes removed = 1 + 1 + 1 + 1 + 1 + 1 + 1 = 7
So, required fraction = $\frac{7}{20}$

ii. Here, required fraction = $\frac{7}{27}$

iii. Here, required part is $\frac{7}{27} \div \frac{7}{20} = \frac{7}{27} \times \frac{20}{7} = \frac{20}{27}$

35. Length of the square field $= 10\frac{3}{4}m = \frac{43}{4}m.$
Breadth of the square field $= 10\frac{3}{4}m = \frac{43}{4}m$
Therefore, area of the square field = Length × Breadth
$= \frac{43}{4} \times \frac{43}{4}m^2$
$= \frac{(43\times43)}{(4\times4)}m^2$
$= \frac{1849}{16}m^2$
$= 115\frac{9}{16}m^2$

Section E

36. i. $2\frac{1}{3}$ by $\frac{2}{5}$
$= 2\frac{1}{3} \times \frac{2}{5}$
$= \frac{7}{3} \times \frac{2}{5}$
$= \frac{(7\times2)}{(3\times5)}$
$= \frac{14}{15}$

ii. $5\frac{3}{4}$ by $2\frac{3}{7}$
$= 5\frac{3}{4} \times 2\frac{3}{7}$
$= \frac{23}{4} \times \frac{17}{7}$
$= \frac{(23\times17)}{(4\times7)}$
$= \frac{391}{28}$
$= 13\frac{27}{28}$

37. product two numbers $= 20\frac{5}{7} = \frac{145}{7}$
One of the numbers is $= 6\frac{2}{3} = \frac{20}{3}$
The other number = (Product of the numbers ÷ One of the numbers)
$= \frac{145}{7} \div \frac{20}{3}$

$= \frac{145}{7} \times \frac{3}{20}$

$= \frac{145 \times 3}{7 \times 20}$

$= \frac{(29 \times 3)}{(7 \times 4)}$

$= \frac{87}{28}$

$= 3\frac{3}{28}$

Hence, the other number is $3\frac{3}{28}$.

38. The area of rectangular plot $= 68\frac{3}{4} sq.\, m = \frac{275}{4} sq.\, m$

Length of the rectangle = $12\frac{1}{2} = \frac{25}{2} m$

length of rectangle =$length \times width$

width = Area ÷ length

width = $\frac{275}{4} \div \frac{25}{2}$

$= \frac{275}{4} \times \frac{2}{25}$

$= \frac{11}{2} m$

$= 5\frac{1}{2} m$

Therefore the width of the rectangle is $5\frac{1}{2} m$.

Section F

39. **Read the text carefully and answer the questions:**

Sushant reads $\frac{1}{3}$ part of a book in 1 hour. Lipika reads $1\frac{1}{2}$ part same book in 1 hour.

(i) 1. more

(ii) **(c)** $\frac{11}{15}$

Explanation: $\frac{11}{15}$

(iii) **(b)** $3\frac{3}{10}$

Explanation: $3\frac{3}{10}$

(iv) **(c)** Lipika reads more by $1\frac{1}{6}$

Explanation: Lipika reads more by $1\frac{1}{6}$

(v) **(b)** False

Explanation: False

40. **Read the text carefully and answer the questions:**

In a class of 40 students $\frac{1}{5}$ of the total number of students like to study English, $\frac{2}{5}$ of the total number like to study Mathematics and the remaining students like to study Science.

(i) 1. numerator

(ii) **(b)** 8

Explanation: 8

(iii) **(d)** 16

Explanation: 16

(iv) **(a)** $\frac{2}{5}$

Explanation: $\frac{2}{5}$

(v) **(a)** True

Explanation: True