Fractions

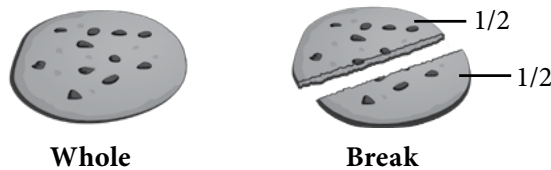## 3.1 FRACTION

When a thing is divided into equal parts, then each part is called a fraction of the whole.

A fraction is written in the form as $\dfrac{\text{Numerator}}{\text{Denominator}}$.

Here, numerator represents equal parts being talked about and denominator is the total number of equal parts.

Whole   **12 equal parts**
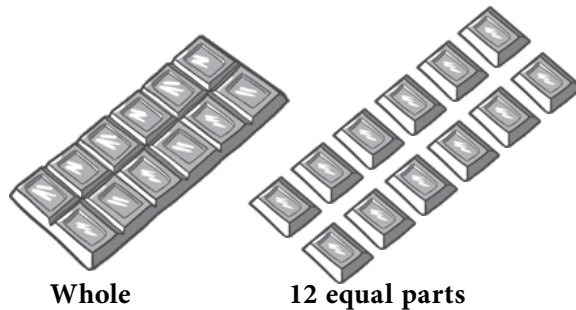
One-Half

When a whole is divided into two equal parts, then each part is called the one-half $\left(\dfrac{1}{2}\right)$ of the whole.
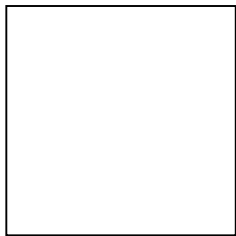

1/2

1/2

Whole   **Break**

One-Third

When a whole is divided into three equal parts, then each part is called the one-third $\left(\dfrac{1}{3}\right)$ of the whole.
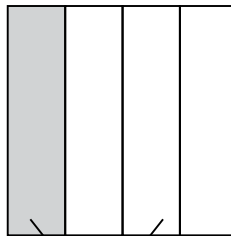

Whole

One-third ⅓   One-third ⅓

One-third ⅓
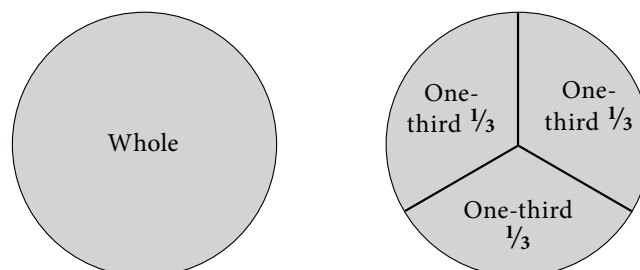
One-Fourth

When a whole is divided into four equal parts, then each part is called one-fourth $\left(\dfrac{1}{4}\right)$ of the whole.
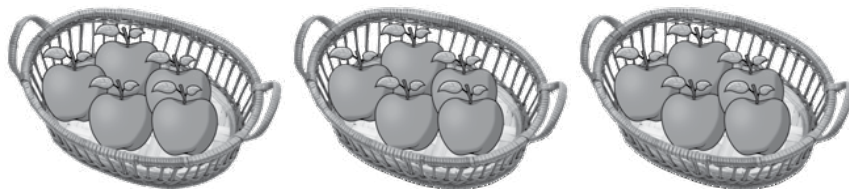

Whole   **One-fourth**

3.2 FRACTION OF A COLLECTION

Aman had a collection of 15 apples. He want to put these apples in three basket in such a way that there are equal number of apples in all the baskets.
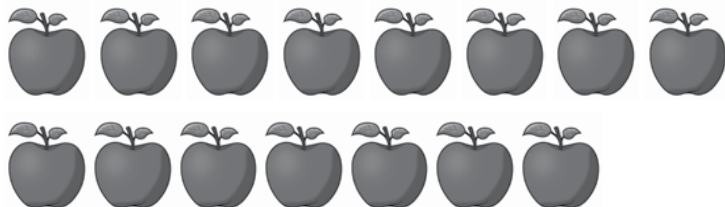
5 Apples   **5 Apples**   **5 Apples**

So, $\dfrac{1}{3}$ of 15 = 15 ÷ 3 = 5

3.3 FRACTION OF SHADED AND UNSHADED PARTS

$$\text{Fraction of shaded/unshaded part} = \frac{\text{Number of shaded/unshaded parts}}{\text{Total number of equal parts}}$$

Consider the given figure.

$$\text{Fraction for shaded part} = \frac{\text{Number of shaded parts}}{\text{Total number of equal parts}} = \frac{6}{10}$$

$$\text{Fraction for unshaded part} = \frac{\text{Number of unshaded parts}}{\text{Total number of equal parts}} = \frac{4}{10}$$
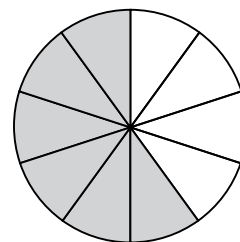
1. Find the shaded fraction of the given figure.

(A) $\dfrac{2}{4}$ (B) $\dfrac{1}{4}$
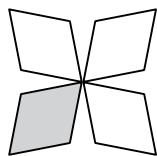
(C) $\dfrac{3}{4}$ (D) 1

2. What fraction of the faces are smiling?
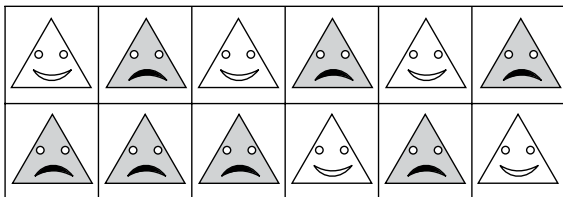
(A) $\dfrac{5}{8}$ (B) $\dfrac{1}{2}$

(C) $\dfrac{5}{12}$ (D) $\dfrac{7}{12}$

3. Denominator of the fraction $\dfrac{4}{11}$ is _____.

(A) 4   (B) 6

(C) 11   (D) 5

4. One-sixth of a collection of 24 toys is _____.

(A) 12   (B) 4

(C) 18   (D) 16

5. Find the value of the following.

$$\boxed{\dfrac{1}{3} \text{ of } 36}$$

(A) 18   (B) 15

(C) 12   (D) 9

3.4 TYPES OF FRACTIONS

Unit Fraction

A fraction in which the numerator is 1 is called unit fraction.

For example : $\dfrac{1}{2}, \dfrac{1}{5}, \dfrac{1}{7}$

Proper Fraction

A fraction in which numerator is smaller than the denominator is called proper fraction.

For example : $\dfrac{3}{4}, \dfrac{5}{8}, \dfrac{7}{9}$

Improper Fraction

A fraction in which numerator is greater than the denominator is called improper fraction.

For example : $\dfrac{6}{5}, \dfrac{9}{7}, \dfrac{5}{3}$

Like Fractions

Fractions having same denominator but different numerators.

For example : $\dfrac{4}{7}$ and $\dfrac{6}{7}$ are like fractions.

> **Olympiad Bite**
>
> - All unit fractions are proper fractions.
> - There is no fraction with 0 as denominator.

Unlike Fractions

Fractions having different denominators. (It doesn't matter what the numerator is)

For example : $\dfrac{5}{7}$ and $\dfrac{9}{4}$ are unlike fractions.

3.5 COMPARISON OF FRACTIONS

➤ When the numerators are same, then the number with smaller denominator is greater.

For example : $\dfrac{2}{4} > \dfrac{2}{6} > \dfrac{2}{7} > \dfrac{2}{8}$

➤ When the denominators are same, then the number with greater numerator is greater.

For example : $\dfrac{7}{3} > \dfrac{6}{3} > \dfrac{5}{3} > \dfrac{4}{3}$

3.6 ADDITION AND SUBTRACTION OF LIKE FRACTIONS

In addition/subtraction of like fractions only numerators are added/subtracted.

For example :

$$\dfrac{3}{5} \qquad + \qquad \dfrac{1}{5} \qquad = \qquad \dfrac{3+1}{5} = \dfrac{4}{5}$$

$$\dfrac{4}{5} \qquad - \qquad \dfrac{1}{5} \qquad = \qquad \dfrac{4-1}{5} = \dfrac{3}{5}$$

SELF TEST - 2
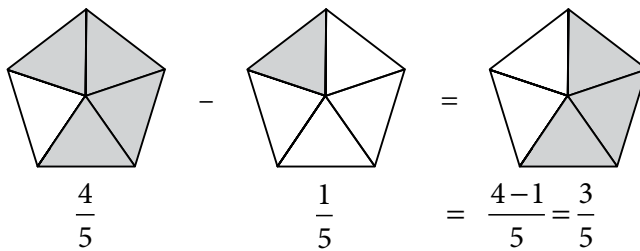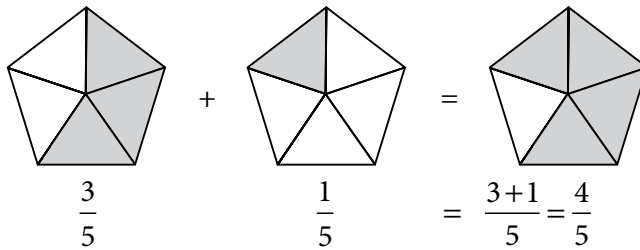
1. Which of the following is a unit fraction?

(A) $\dfrac{4}{5}$ (B) $\dfrac{2}{3}$

(C) $\dfrac{3}{2}$ (D) $\dfrac{1}{5}$

2. Find the sum of $\dfrac{2}{5}$ and $\dfrac{6}{5}$.

(A) $\dfrac{4}{5}$ (B) $\dfrac{8}{5}$

(C) $\dfrac{3}{5}$ (D) $\dfrac{1}{5}$

3. Compare and fill in the box.

$$\dfrac{4}{7} + \dfrac{2}{7} \;\square\; \dfrac{5}{7} - \dfrac{2}{7}$$

(A) <   (B) >

(C) =   (D) Can't be determined

4. Which of the following fractions is greatest?

(A) $\dfrac{3}{11}$ (B) $\dfrac{4}{11}$

(C) $\dfrac{8}{11}$ (D) $\dfrac{9}{11}$

5. Which of the following set of fractions is like fractions?

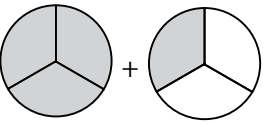(A) $\dfrac{2}{3}, \dfrac{4}{5}, \dfrac{6}{7}, \dfrac{7}{8}$ (B) $\dfrac{4}{5}, \dfrac{3}{5}, \dfrac{2}{5}, \dfrac{1}{5}$

(C) $\dfrac{5}{6}, \dfrac{5}{7}, \dfrac{5}{8}, \dfrac{5}{9}$ (D) $\dfrac{1}{2}, \dfrac{3}{4}, \dfrac{4}{5}, \dfrac{5}{7}$

EXERCISE

1. What fraction of the given figure is shaded?

(A) $\dfrac{8}{16}$ (B) $\dfrac{6}{16}$

(C) $\dfrac{10}{16}$ (D) $\dfrac{5}{16}$

2. Which of the following shows the fraction of crossed fidget?

(A) $\dfrac{7}{3}$ (B) $\dfrac{5}{7}$

(C) $\dfrac{4}{7}$ (D) $\dfrac{3}{7}$

3. Which of the following options shows the correct descending order of fractions?

(A) $\dfrac{4}{7}, \dfrac{5}{7}, \dfrac{8}{7}, \dfrac{6}{7}$ (B) $\dfrac{3}{10}, \dfrac{4}{10}, \dfrac{5}{10}, \dfrac{7}{10}$

(C) $\dfrac{8}{9}, \dfrac{7}{9}, \dfrac{5}{9}, \dfrac{2}{9}$ (D) None of these

4. Which of the following is a proper fraction?

(A) $\dfrac{17}{9}$ (B) $\dfrac{3}{5}$

(C) $\dfrac{12}{7}$ (D) $\dfrac{11}{3}$

5. Subtract $\dfrac{4}{13}$ from $\dfrac{9}{13}$.

(A) $\dfrac{5}{13}$ (B) $\dfrac{3}{13}$

(C) $\dfrac{4}{13}$ (D) $\dfrac{8}{13}$

6. Fraction of the shaded parts of the given figure is _____.

(A) $\dfrac{1}{8}$ (B) $\dfrac{7}{8}$

(C) $\dfrac{5}{8}$ (D) $\dfrac{3}{8}$

7. A pizza was cut into 12 equal pieces. Aanya ate 5 pieces. What fraction of the pizza is left with her?

(A) $\dfrac{5}{12}$ (B) $\dfrac{7}{12}$

(C) $\dfrac{3}{12}$ (D) $\dfrac{12}{5}$

8. What fraction of the given crayons are green?

(A) $\dfrac{1}{7}$ (B) $\dfrac{2}{7}$

(C) $\dfrac{4}{7}$ (D) $\dfrac{3}{7}$

9. $\dfrac{3}{4}$ represent _____.

(A) A whole (B) 3 parts of whole

(C) 4 parts of whole (D) 7 parts of whole

10. Aanchal's birthday cake was cut into 10 equal pieces. She distribute them equally among her five friends. What fraction of the cake each friend get?

(A) $\dfrac{1}{10}$ (B) $\dfrac{5}{10}$

(C) $\dfrac{2}{10}$ (D) $\dfrac{8}{10}$

11. Rashmi bakes 37 biscuits. She gave 23 biscuits to poor children. What fraction of biscuits is left with her?

(A) $\dfrac{14}{37}$ (B) $\dfrac{23}{37}$

(C) $\dfrac{15}{37}$ (D) $\dfrac{37}{14}$

12. Shaded fraction of + = _?_ .

(A) $\dfrac{5}{3}$ (B) $\dfrac{7}{3}$

(C) $\dfrac{4}{3}$ (D) $\dfrac{8}{3}$

13. There are 8 , 5 , 3 in a zoo. What fraction of the total animals are monkey in the zoo?

(A) $\dfrac{3}{15}$ (B) $\dfrac{5}{16}$

(C) $\dfrac{3}{16}$ (D) $\dfrac{8}{15}$

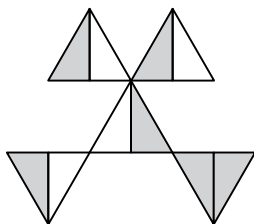**14.** What fraction of letters in the word GEOMETRY are vowel?

(A) $\dfrac{2}{8}$ (B) $\dfrac{3}{8}$

(C) $\dfrac{2}{7}$ (D) $\dfrac{4}{8}$

15. Fraction of the digit 7 in the given series is _____.
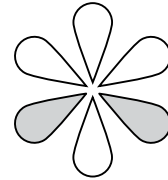
2 7 9 8 1 5 4 7 3 2 5 7 8 9 1 0 5 4 7 9 8

(A) $\dfrac{5}{21}$ (B) $\dfrac{3}{19}$

(C) $\dfrac{4}{17}$ (D) $\dfrac{4}{21}$

16. What fraction of the given figure is unshaded?

(A) $\dfrac{5}{10}$ (B) $\dfrac{4}{10}$

(C) $\dfrac{6}{10}$ (D) $\dfrac{7}{10}$

17. The flower shown contains 6 petals. How many more petals must be shaded so that $\dfrac{1}{2}$ of the flower is shaded?
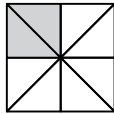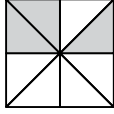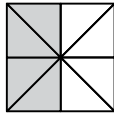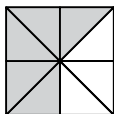

(A) 1   (B) 2
(C) 3   (D) 4

18. There is no fraction whose denominator is _____.

(A) 0   (B) 1
(C) 2   (D) 5

19. Which of the following options shows the correct match of shaded fraction?

(A) $= \dfrac{5}{8}$ (B) $= \dfrac{4}{5}$

(C) $= \dfrac{4}{8}$ (D) $= \dfrac{3}{8}$

20. Which symbol will make the given number sentence true?
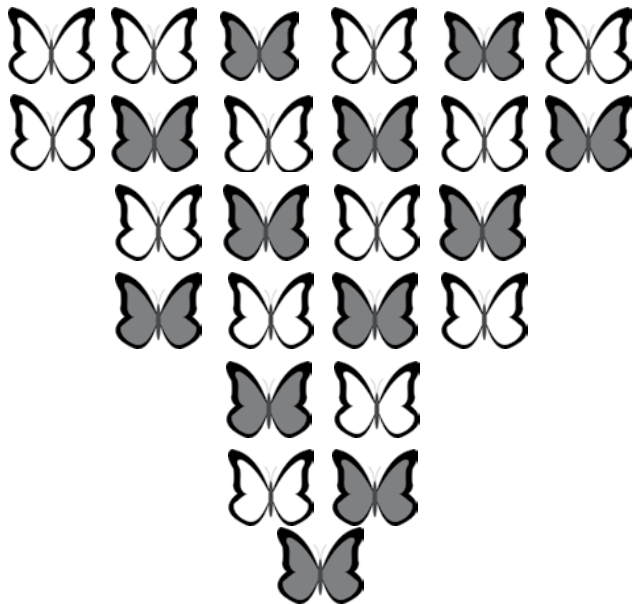
$$\frac{2}{7}+\frac{4}{7}-\frac{1}{7}\,\square\,\frac{1}{7}+\frac{5}{7}-\frac{6}{7}$$

(A) >   (B) <
(C) =   (D) Can't be determined

21. Sneha puts $\dfrac{1}{5}$ cup of sugar in a bowl. Then she adds $\dfrac{3}{5}$ cup of sugar more. How much sugar is in the bowl now?

(A) $\dfrac{3}{5}$ cup   (B) $\dfrac{4}{5}$ cup

(C) $\dfrac{2}{5}$ cup   (D) 1 cup

22. What fraction of the given butterflies are not shaded?

(A) $\dfrac{12}{25}$

(B) $\dfrac{13}{25}$

(C) $\dfrac{21}{26}$

(D) $\dfrac{5}{25}$

23. What fraction of English alphabets is consonant?

(A) $\dfrac{5}{26}$

(B) $\dfrac{5}{21}$

(C) $\dfrac{21}{26}$

(D) $\dfrac{5}{24}$

24. There are 60 trees in a garden. Kirti has watered $\dfrac{1}{3}$ of the trees. What fraction of trees unwatered?
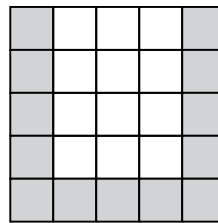
(A) $\dfrac{40}{60}$

(B) $\dfrac{5}{60}$

(C) $\dfrac{21}{26}$

(D) $\dfrac{1}{60}$

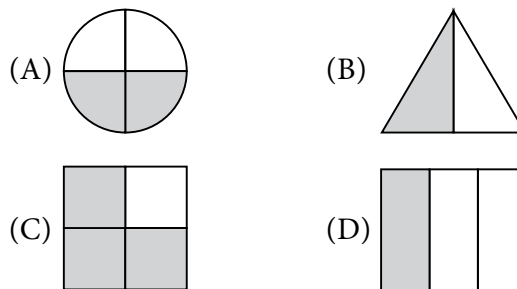**25.** What fraction of stars are outside the box?

(A) $\dfrac{5}{13}$

(B) $\dfrac{5}{8}$

(C) $\dfrac{8}{13}$

(D) $\dfrac{8}{5}$

26. The fraction of unshaded region shown in the figure is represented by _____.

(A) $\dfrac{12}{13}$

(B) $\dfrac{13}{25}$

(C) $\dfrac{13}{12}$

(D) $\dfrac{12}{25}$

27. Which of the following shapes shows $\dfrac{1}{3}$ part shaded?

28. Piyush bought 85 cans of paint and used 32 cans. What fraction of the paint of cans did he use?

(A) $\dfrac{32}{85}$

(B) $\dfrac{35}{85}$

(C) $\dfrac{53}{85}$

(D) $\dfrac{32}{53}$

29. What fraction of the given figure is shaded?
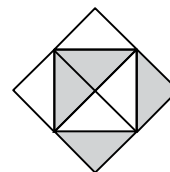
(A) $\dfrac{4}{8}$

(B) $\dfrac{4}{7}$

(C) $\dfrac{4}{6}$

(D) $\dfrac{3}{8}$

30. Vaibhav has fifty ₹ 10 coins and twenty five ₹ 5 coins. What fraction of coins are ₹ 10 coins?
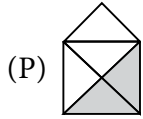
(A) $\dfrac{25}{75}$

(B) $\dfrac{25}{50}$

(C) $\dfrac{50}{75}$

(D) $\dfrac{50}{100}$

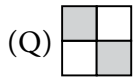**31.** Match the figures given in Column 1 with their shaded fractions given in Column 2.

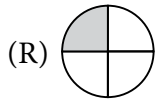| Column 1	Column 2
(P)	(1) $\dfrac{1}{4}$
(Q)	(2) $\dfrac{2}{5}$
(R)	(3) $\dfrac{2}{4}$

(A) (P) → (1); (Q) → (3); (R) → (2)
(B) (P) → (2); (Q) → (3); (R) → (1)
(C) (P) → (2); (Q) → (1); (R) → (3)
(D) (P) → (1); (Q) → (2); (R) → (3)

32. Fill in the blanks.

(P) The figure represents _____ shaded fraction.

(Q) In the figure , _____ fraction of the bananas are encircled.

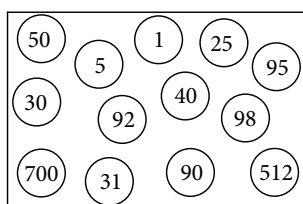(R) _____ fraction of letters in the word CREATIVE are vowels.

	(P)	(Q)	(R)
(A)	$\dfrac{4}{8}$	$\dfrac{4}{8}$	$\dfrac{3}{8}$
(B)	$\dfrac{5}{8}$	$\dfrac{4}{8}$	$\dfrac{4}{8}$
(C)	$\dfrac{5}{8}$	$\dfrac{4}{8}$	$\dfrac{3}{8}$
(D)	$\dfrac{4}{8}$	$\dfrac{5}{8}$	$\dfrac{4}{8}$

33. Which of the following statements is CORRECT about the given figure?

(A) Fraction of numbers having zero at units place is $\dfrac{5}{13}$.

(B) Fraction of numbers having nine at tens place is $\dfrac{4}{13}$.

(C) Fraction of three digit numbers is $\dfrac{2}{13}$.

(D) All of these

34. Arrange the shaded fractions of given figures in descending order.
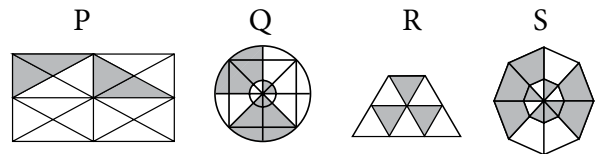
P   Q   R   S

(A) P, Q, R, S   (B) S, Q, R, P
(C) P, Q, S, R   (D) S, R, P, Q

35. If = and

 = 1 whole, then = __?__.

(A) $\dfrac{2}{9}$ (B) $\dfrac{4}{9}$

(C) $\dfrac{8}{9}$ (D) $\dfrac{1}{9}$

SOF IMO 2019 QUESTIONS

1. What fraction of the given butterflies is NOT red?

(A) $\dfrac{6}{11}$ (B) $\dfrac{5}{11}$

(C) $\dfrac{4}{11}$ (D) $\dfrac{2}{11}$ *(Level-1)*

2. Malika has 10 strawberry ice-creams and 15 chocolate ice-creams. What fraction of the total ice-creams is the chocolate ice-creams?

Strawberry   Chocolate

(A) $\dfrac{5}{25}$ (B) $\dfrac{15}{25}$

(C) $\dfrac{10}{15}$ (D) $\dfrac{10}{25}$ *(Level-1)*

3. Match the following figures with their correct shaded fraction and select the correct option.
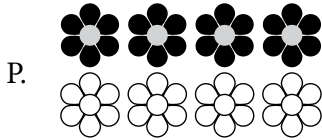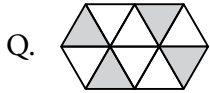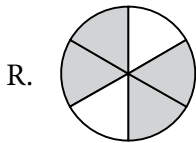
Column A	**Column B**

P.   (a) $\dfrac{4}{10}$

Q.   (b) $\dfrac{4}{6}$

R.   (c) $\dfrac{4}{8}$

(A) P → (c), Q → (b), R → (a)
(B) P → (b), Q → (c), R → (a)
(C) P → (c), Q → (a), R → (b)
(D) P → (b), Q → (a), R → (c)   *(Level-1)*

4. In which of the following options, fractions are arranged in ascending order?

(A) $\dfrac{2}{7},\dfrac{9}{7},\dfrac{5}{7},\dfrac{3}{7}$ (B) $\dfrac{2}{7},\dfrac{9}{7},\dfrac{3}{7},\dfrac{5}{7}$

(C) $\dfrac{2}{7},\dfrac{3}{7},\dfrac{5}{7},\dfrac{9}{7}$ (D) $\dfrac{9}{7},\dfrac{5}{7},\dfrac{3}{7},\dfrac{2}{7}$ *(Level-1)*

5. Which of the following figures shows $\dfrac{2}{4}$ shaded part?

(A)   (B)

(C)   (D)   *(Level-1)*

6. There were 1010 pastries in a shop. Of these, 175 were butterscotch pastries, 240 were chocolate and the rest were pineapple. What fraction of pastries were pineapple in the shop?
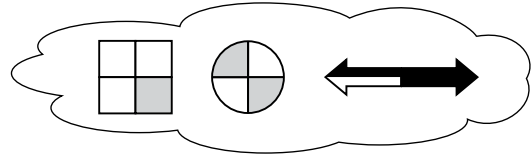
(A) $\dfrac{275}{1010}$ (B) $\dfrac{415}{1010}$

(C) $\dfrac{119}{1010}$ (D) $\dfrac{595}{1010}$ *(Level-1)*

7. What fraction of the letters of the word LIBRARY is vowel?

(A) $\dfrac{5}{7}$ (B) $\dfrac{7}{2}$

(C) $\dfrac{2}{7}$ (D) $\dfrac{7}{5}$ *(Level-2)*

8. Find the sum of shaded fractions of the given figures.

(A) $\dfrac{8}{4}$ (B) $\dfrac{5}{4}$

(C) $\dfrac{7}{4}$ (D) $\dfrac{6}{4}$ *(Level-2)*

9. Which of the following has $\dfrac{6}{8}$ of its contents shaded?

P	Q	R	S
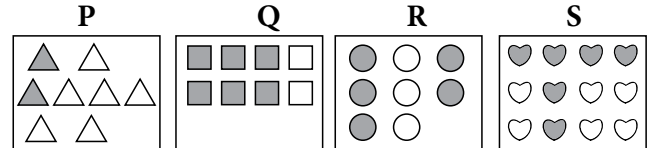
(A) P   (B) Q
(C) R   (D) S   *(Level-2)*

10. Match the following and select the correct option.

Column-A	**Column-B**

P. $\dfrac{7}{9}-\dfrac{6}{9}$ (a) $\dfrac{9}{13}$

Q. $\dfrac{1}{4}+\dfrac{3}{4}+\dfrac{2}{4}$ (b) $\dfrac{1}{9}$

R. $\dfrac{3}{13}+\dfrac{7}{13}-\dfrac{1}{13}$ (c) $\dfrac{2}{14}$

S. $\dfrac{12}{14}-\dfrac{10}{14}$ (d) $\dfrac{6}{4}$

(A) P-(a); Q-(d); R-(c); S-(b)
(B) P-(b); Q-(d); R-(a); S-(c)
(C) P-(b); Q-(a); R-(d); S-(c)
(D) P-(c); Q-(d); R-(a); S-(b)   *(Level-2)*

HINTS & EXPLANATIONS

1. **(B):** Total number of equal parts = 4

Number of shaded part = 1

So, shaded fraction = $\dfrac{1}{4}$

2. **(C):** Total number of faces = 12

Number of smiling faces = 5

$\therefore$ Required fraction = $\dfrac{5}{12}$

3. **(C):** Fraction = $\dfrac{4 \longrightarrow \text{Numerator}}{11 \longrightarrow \text{Denominator}}$

4. **(B):** Total number of toys = 24

So, one-sixth of 24 toys = 24 ÷ 6 = 4

5. **(C):** $\dfrac{1}{3}$ of 36 = 36 ÷ 3 = 12

1. **(D)**

2. **(B):** Required sum = $\dfrac{2}{5}+\dfrac{6}{5}=\dfrac{2+6}{5}=\dfrac{8}{5}$

3. **(B):** $\dfrac{4}{7}+\dfrac{2}{7}=\dfrac{4+2}{7}=\dfrac{6}{7}$

$\dfrac{5}{7}-\dfrac{2}{7}=\dfrac{5-2}{7}=\dfrac{3}{7}$

And $\dfrac{6}{7}\boxed{>}\dfrac{3}{7}$

4. **(D):** $\dfrac{9}{11}>\dfrac{8}{11}>\dfrac{4}{11}>\dfrac{3}{11}$.

5. **(B)**

1. **(B):** Total number of equal parts = 16

Number of shaded parts = 6

So, required shaded fraction = $\dfrac{6}{16}$

2. **(D):** Total number of fidgets = 7

Number of crossed fidgets = 3

So, required fraction = $\dfrac{3}{7}$

3. **(C):** $\dfrac{8}{9}>\dfrac{7}{9}>\dfrac{5}{9}>\dfrac{2}{9}$

4. **(B)**

5. **(A):** Required difference = $\dfrac{9}{13}-\dfrac{4}{13}=\dfrac{9-4}{13}=\dfrac{5}{13}$

6. **(C):** Total number of equal parts = 8

Number of shaded parts = 5

So, shaded fraction = $\dfrac{5}{8}$

7. **(B):** Total number of equal parts of pizza = 12

Number of parts of pizza Aanya ate = 5

Number of parts of pizza left = 12 – 5 = 7

So, fraction of pizza left = $\dfrac{7}{12}$

8. **(D):** Total number of crayons = 7

Number of green crayons = 3

So, fraction of green crayons = $\dfrac{3}{7}$

9. **(B)**

10. **(C):** Total number of equal pieces of cake = 10

Number of friends = 5

So, each friend get 10 ÷ 5 = 2 equal pieces

So, fraction of cake each friend get = $\dfrac{2}{10}$

11. **(A):** Total number of biscuits baked = 37

Number of biscuits given to poor children = 23

Number of biscuits left = 37 – 23 = 14

So, fraction of biscuits left = $\dfrac{14}{37}$

12. **(C):** Shaded fraction of +
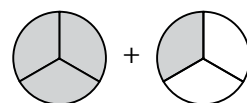
$= \dfrac{3}{3}+\dfrac{1}{3}=\dfrac{3+1}{3}=\dfrac{4}{3}$

13. **(C):** Total number of animals in the zoo

= 8 + 5 + 3 = 16

Number of monkeys in the zoo = 3

So, required fraction = $\dfrac{3}{16}$

14. **(B):** Total number of letters in the given word = 8

Total number of vowels (E, O, E) = 3

So, fraction of vowels in the given word = $\dfrac{3}{8}$

15. (D): Total number of digits in the given series = 21
Number of digit 7 in the given series = 4
So, required fraction = $\dfrac{4}{21}$

16. (B): Total number of equal parts = 10
Number of unshaded parts = 4
So, fraction of unshaded part = $\dfrac{4}{10}$

17. (A): Total number of petals = 6
Total number of petals must be shaded to make
shaded fraction $\dfrac{1}{2} = \dfrac{1}{2} \times 6 = 3$
Number of more petals must be shaded = 3 – 2 = 1

18. (A)

19. (C):

	Number of equal parts	Number of shaded parts	Shaded fraction
(A)	8	2	2/8
(B)	8	3	3/8
(C)	8	4	4/8
(D)	8	5	5/8

20. (A): $\dfrac{2}{7} + \dfrac{4}{7} - \dfrac{1}{7} = \dfrac{2+4}{7} - \dfrac{1}{7} = \dfrac{6}{7} - \dfrac{1}{7} = \dfrac{6-1}{7} = \dfrac{5}{7}$

and $\dfrac{1}{7} + \dfrac{5}{7} - \dfrac{6}{7} = \dfrac{1+5}{7} - \dfrac{6}{7} = \dfrac{6}{7} - \dfrac{6}{7} = \dfrac{6-6}{7} = \dfrac{0}{7} = 0$

So, $\dfrac{5}{7} > 0$

21. (B): Quantity of sugar Sneha puts in bowl
= $\dfrac{1}{5}$ cup

Quantity of sugar added = $\dfrac{3}{5}$ cup

Quantity of sugar in bowl now = $\left(\dfrac{1}{5} + \dfrac{3}{5}\right)$ cup

= $\dfrac{1+3}{5}$ cup = $\dfrac{4}{5}$ cup

22. (B): Total number of butterflies = 25
Number of shaded butterflies = 12
So, number of butterflies not shaded = 25 – 12 = 13
So, fraction of butterflies not shaded = $\dfrac{13}{25}$

23. (C): Total number of alphabets = 26
Total number of consonants = 21
So, fraction of consonants = $\dfrac{21}{26}$

24. (A): Total number of trees in the garden = 60
Number of trees Kirti watered = $\dfrac{1}{3}$ of 60
= 60 ÷ 3 = 20
∴ Number of trees unwatered = 60 – 20 = 40
So, fraction of trees left unwatered = $\dfrac{40}{60}$

25. (A): Total number of stars = 13
Number of stars outside the box = 5
So, required fraction = $\dfrac{5}{13}$

26. (D): Total number of equal parts = 25
Number of unshaded parts = 12
So, fraction of unshaded region = $\dfrac{12}{25}$

27. (D): (A) Total number of equal parts = 4
Number of shaded parts = 2
∴ Shaded fraction = $\dfrac{2}{4}$
(B) Total number of equal parts = 2
Number of shaded part = 1
∴ Shaded fraction = $\dfrac{1}{2}$
(C) Total number of equal parts = 4
Number of shaded parts = 3
∴ Shaded fraction = $\dfrac{3}{4}$
(D) Total number of equal parts = 3
Number of shaded part = 1
∴ Shaded fraction = $\dfrac{1}{3}$

28. (A): Total number of cans bought = 85
Number of cans used = 32
So, fraction of cans used = $\dfrac{32}{85}$

29. (A): Total number of equal parts = 8
Number of shaded parts = 4
So, fraction of shaded part = $\dfrac{4}{8}$

30. (C): Total number of coins = 50 + 25 = 75
Number of ₹ 10 coins = 50
So, fraction of ₹ 10 coins = $\dfrac{50}{75}$

31. (B): (P) Total number of equal parts = 5
Number of shaded parts = 2
So, shaded fraction = $\dfrac{2}{5}$

(Q) Total number of equal parts = 4

Number of shaded parts = 2

So, shaded fraction = $\dfrac{2}{4}$

(R) Total number of equal parts = 4

Number of shaded part = 1

So, shaded fraction = $\dfrac{1}{4}$

32. (B): (P) Total number of equal parts = 8

Number of shaded parts = 5

So, shaded fraction = $\dfrac{5}{8}$

(Q) Total number of bananas = 8

Number of encircled bananas = 4

So, fraction of encircled bananas = $\dfrac{4}{8}$

(R) Total number of letters = 8

Number of vowels (E, A, I, E) = 4

So, fraction of vowels = $\dfrac{4}{8}$

33. (D): Total numbers = 13

(A) Numbers having zero at units place

(50, 40, 30, 90, 700) = 5

So, required fraction = $\dfrac{5}{13}$

(B) Numbers having 9 at tens place (92, 98, 90, 95) = 4

So, required fraction = $\dfrac{4}{13}$
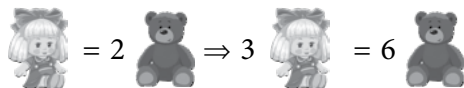
(C) Three digit numbers (700, 512) = 2

So, required fraction = $\dfrac{2}{13}$

34. (B):

Figure	Shaded fraction
P	2/8
Q	4/8
R	3/8
S	5/8

Correct descending order is S, Q, R, P.

35. (B): 1 👧 = 2 🧸 ⇒ 3 👧 = 6 🧸

⇒ (6 + 3) 🧸 = 1 ⇒ 9 🧸 = 1 ⇒ 1 🧸 = $\dfrac{1}{9}$

⇒ 🧸👧🧸 = 🧸🧸🧸🧸 = $\dfrac{4}{9}$

1. (A): Total number of butterflies = 11

Number of butterflies which are not red = 6

So, required fraction = $\dfrac{6}{11}$

2. (B): Total number of ice-creams = 10 + 15 = 25

Number of chocolate ice-creams = 15

So, required fraction = $\dfrac{15}{25}$

3. (C): (P) Total number of flowers = 8

Number of shaded flowers = 4

∴ Shaded fraction = $\dfrac{4}{8}$

(Q) Total number of equal parts = 10

Number of shaded parts = 4

∴ Shaded fraction = $\dfrac{4}{10}$

(R) Total number of equal parts = 6

Number of shaded parts = 4

∴ Shaded fraction = $\dfrac{4}{6}$

4. (C): $\dfrac{2}{7} < \dfrac{3}{7} < \dfrac{5}{7} < \dfrac{9}{7}$

5. (B): (A) Total number of equal parts = 4

Number of shaded parts = 1

So, shaded fraction = $\dfrac{1}{4}$

(B) Total number of equal parts = 4

Number of shaded parts = 2

So, shaded fraction = $\dfrac{2}{4}$

(C) Total number of equal parts = 4

Number of shaded parts = 1

So, shaded fraction = $\dfrac{1}{4}$

(D) Total number of equal parts = 4

Number of shaded parts = 3

So, shaded fraction = $\dfrac{3}{4}$

6. (D): Total number of pastries = 1010

Total number of butterscotch and chocolate pastries

= 175 + 240 = 415

∴ Number of pineapple pastries = 1010 – 415 = 595

So, fraction of pineapple pastries = $\dfrac{595}{1010}$

7. (C): Total number of letters = 7

Number of vowels (I, A) = 2

So, fraction of vowels = $\dfrac{2}{7}$

8. (D): Shaded fraction of first figure = $\dfrac{1}{4}$

Shaded fraction of second figure = $\dfrac{2}{4}$

Shaded fraction of third figure = $\dfrac{3}{4}$

$\therefore$ Required sum = $\dfrac{1}{4}+\dfrac{2}{4}+\dfrac{3}{4}$

$= \dfrac{1+2+3}{4}=\dfrac{6}{4}$

9. (B): P. Total number of figures = 8

Number of shaded figures = 2

So, shaded fraction = $\dfrac{2}{8}$

Q. Total number of figures = 8

Number of shaded figures = 6

So, shaded fraction = $\dfrac{6}{8}$

R. Total number of figures = 8

Number of shaded figures = 5

So, shaded fraction = $\dfrac{5}{8}$

S. Total number of figures = 12

Number of shaded figures = 6

So, shaded fraction = $\dfrac{6}{12}$

10. (B): (P) $\dfrac{7}{9}-\dfrac{6}{9}=\dfrac{7-6}{9}=\dfrac{1}{9}$

(Q) $\dfrac{1}{4}+\dfrac{3}{4}+\dfrac{2}{4}=\dfrac{1+3+2}{4}=\dfrac{6}{4}$

(R) $\dfrac{3}{13}+\dfrac{7}{13}-\dfrac{1}{13}=\dfrac{3+7}{13}-\dfrac{1}{13}=\dfrac{10}{13}-\dfrac{1}{13}$

$= \dfrac{10-1}{13}=\dfrac{9}{13}$

(S) $\dfrac{12}{14}-\dfrac{10}{14}=\dfrac{12-10}{14}=\dfrac{2}{14}$