



Bank Job Lecture Sheet

Lecture 6

Lecture Contents

☑ Fraction, Ratio & Mixture

Fraction, Ratio & Mixture

Basic Concept:

দুটি রাশিকে বা দুটি পূর্ণ সংখ্যাকে ভাগ আকারে প্রকাশ করাকে Fraction বা ভগ্নাংশ বলে।

$$\text{Fraction} = \frac{\text{Numerator}}{\text{Denominator}} \quad [\text{ভগ্নাংশ} = \frac{\text{লব}}{\text{হর}}]$$

Proper fraction (প্রকৃত ভগ্নাংশ): মান 1 থেকে ছোট হলে তাকে Proper fraction বলে।

$$\text{eq- } \frac{1}{2}, \frac{3}{4}$$

Improper fraction (অপ্রকৃত ভগ্নাংশ): মান 1 থেকে বড় হলে তাকে Improper fraction বলে।

$$\text{eq- } \frac{3}{2}, \frac{5}{3}$$

Teacher's Discussion

1. When 6 gallons of gasoline are put into a car, the indicator goes from $\frac{1}{4}$ to $\frac{5}{8}$. What is the total capacity of the gasoline tank? [Joint Recruitment Test for 3 Banks Senior Officer- 2018]
A. 12 B. 14 C. 16 D. 18 Ans: C
2. X, Y & Z has started a business with a profit sharing ratio 7 : 8 : 9. If at the end of the year, Y gets a total of Taka 4000 what will be Z's profit? [Combined 5 Banks Officer- 2022]
A. Tk. 4500 B. Tk. 4000 C. Tk. 3500 D. Tk. 5500 Ans: A
3. The ratio of two numbers is 2 : 3. The sum of the numbers is 100. The difference between the two numbers is: [Combined 5 Banks Officer- 2022]



A. 15

B. 40

C. 25

D. 20

Ans: D

4. Which one of the following fractions is greater than $\frac{1}{2}$? [Combined 8 Banks Officer- 2022]

A. $\frac{2}{5}$ B. $\frac{4}{7}$ C. $\frac{4}{9}$ D. $\frac{5}{11}$

Ans: B

5. The Present ratio of students to teachers at a certain school is 30 to 1. If the number of students were to increase by 50 and that of teachers were to increase by 5, the ratio of students to teachers would then be 25 to 1. What is the present number of teachers? [Combined 9 Bank Senior Officer (General)-2023]

A. 8

B. 10

C. 12

D. 15

Ans: D

6. The amount of time that three secretaries worked on a special project are in the ratio of 1 to 2 to 5. If they worked a combined total of 112 hours, how many hours did the secretary who worked the longest spend on the project? [Combined 9 Banks Officer- 2022]

A. 80

B. 70

C. 56

D. 16

Ans: B

7. The ratio of two numbers is 7 : 4. If 8 is added to both the number ratio becomes 13 : 8. What is the smallest number? [Combined 7 Banks Senior Officer- 2021]

A. 52

B. 56

C. 38

D. 40

Ans: D

8. A mixture of 20 kg of spirit and water contains 10% water. How much water must be added mixture to raise the percentage of water to 25%? [Combined 7 Banks Senior Officer- 2021]

A. 2 kg

B. 4 kg

C. 5 kg

D. 6 kg

Ans: B

9. Two numbers A and B are such that the sum of 5% of A and 4% of B is two-third of the sum of 6% of A and 8% of B. What is the ratio of A and B? [Bangladesh Bank AD- 2016]

A. 1 : 1

B. 3 : 4

C. 4 : 3

D. 2 : 3

Ans: C

10. If 0.4 of a number is equal to 0.06 of another number, the ratio of the numbers is: [Bangladesh Bank AD- 2016]

A. 3 : 4

B. 3 : 20

C. 20 : 3

D. 2 : 3

Ans: B

11. Robi takes 3 minutes to inspect a car, and Sashi takes 4 minutes to inspect a car. If they both start inspecting different cars at 8:30 AM, what would be the ratio of the number of cars inspected by Robi and Sashi by 8:54 AM of the same day? [Bangladesh Bank AD- 2012]

A. 3 : 2

B. 4 : 3

C. 2 : 6

D. 8 : 12

Ans: B

12. A man spent $\frac{1}{2}$ of his money and then lost $\frac{1}{4}$ of the remainder. He was left with Tk. 3600. How much did he start with? [Southeast Bank PO- 2020]

A. Tk. 7200

B. Tk. 3600

C. Tk. 9600

D. Tk. 10400

Ans: C

13. A fuel tank is $\frac{1}{5}$ th full and requires 32 gallons more to make it $\frac{3}{7}$ full. What is the capacity of the tank?

[Southeast Bank PO- 2020]

A. 120 gallons

B. 140 gallons

C. 135 gallons

D. 141 gallons

Ans: B

14. Alok's monthly salary is $\frac{5}{2}$ times as much as Babul's and Babul's monthly salary is 60% less than that Chumki. If their average monthly salary is Tk. 54000, what is the monthly salary of Chumki? [UCB PO- 2020]

A. Tk. 67500

B. Tk. 27000

C. Tk. 24000

D. Tk. 52000

Ans: A

15. Badhon has 60 kg of 18% sugar solution. How much sugar should he add to make it 40% sugar solution? [Dutch-Bangla Bank PO- 2019]

A. 20 kg

B. 22 kg

C. 23 kg

D. 24 kg

Ans: B



16. A gas tank is $\frac{1}{5}$ th full and requires 32 gallons more to make it $\frac{3}{7}$ th full. What is the capacity of the tank? [Islami Bank PO- 2019]
A. 115 B. 120 C. 135 D. 140* **Ans: D**
17. An amount of Tk. 735 was divided among A, B and C. If each of them had received Tk. 25 less, their shares would have been in the ratio of 1 : 3 : 2. The money received by C was: [Uttara Bank AO- 2022]
A. 195 B. 200 C. 225 D. 245 **Ans: D**
18. A glass when full of milk weighs one kg. When half full, it weighs $\frac{3}{4}$ kg. What is the weight (in kg) of the empty glass? [Uttara Bank AO- 2022]
A. 0.25 B. 0.35 C. 0.45 D. 0.50 **Ans: D**
19. A, B and C investment in a partnership in the ratio of 5 : 6 : 8. The ratio of their profit is 5 : 2 : 12. Find the ratio of time for their investment? [One Bank, Special Cadre Officer- 2022]
A. 1 : 3 : 5 B. 2 : 1 : 3 C. 1 : 7 : 5 D. 4 : 3 : 5 **Ans: B**
20. In a certain class consisting of 36 students, some boys and some girls, exactly $\frac{1}{3}$ of the boys and exactly $\frac{1}{4}$ of the girls walk to school. What is the greatest possible number of students in this class who walk to school? [Probashi Kallayan Bank Senior Officer- 2021]
A. 9 B. 10 C. 11 D. 12 **Ans: C**
21. The number of students in 3 classes is in the ratio 2 : 3 : 4. If 12 students are increased in each class this ratio changes to 8 : 11 : 14. The total number of students in the three classes in the beginning was: [Probashi Kallayan Bank Senior Officer- 2021]
A. 162 B. 108 C. 96 D. 54 **Ans: A**
22. A, B and center into partnership with investments in the ratio of 5 : 7 : 8. If, at the end of the year A's share of profit is Tk. 42360, how much is the total profit? [Probashi Kallayan Bank Senior Officer- 2021]
A. Tk. 169440 B. 183000 C. Tk. 196700 D. Tk. 168440 **Ans: A**

Student's Drill

1. Which of the following fractions is largest?
(A) $\frac{5}{3}$ (B) $\frac{7}{4}$ (C) $\frac{2}{4}$ (D) $\frac{7}{11}$ **Ans: B**
2. $0.03 \times 0.0004 \times 1.003 = ?$
(A) 0.000012036 (B) 0.0001236 (C) 0.00001236 (D) 0.12036 **Ans: A**
3. Which of the following fractions is the smallest?
(A) $\frac{2}{9}$ (B) $\frac{5}{12}$ (C) $\frac{5}{8}$ (D) $\frac{1}{2}$ **Ans: A**
4. A water reservoir is $\frac{1}{5}$ Full and requires 20 liters more to make it $\frac{3}{5}$ th full. What is the capacity of the reservoir?
(A) 40 (B) 50 (C) 60 (D) 80 **Ans: B**

5. A person made a gift $\frac{2}{3}$ of his property to his son and $\frac{1}{2}$ of his property to his daughter. Daughter got Tk. 1500 less than that of son. What is total value of the property?
(A) 3000 (B) 4500 (C) 6000 (D) 7500 **Ans: A**
6. A piece of rope is cut into three section so that the first section is three times as long as the second and the second section is three times as long as the third. What fraction of the entire piece is the smallest section?
(A) $\frac{1}{5}$ (B) $\frac{1}{7}$ (C) $\frac{1}{9}$ (D) $\frac{1}{13}$ **Ans: D**
7. A cake is divided into three pieces so that the first piece is four times as big as the second and the second piece is three times as big as the third. What fraction of the entire cake is the smallest piece?
(A) $\frac{1}{8}$ (B) $\frac{1}{12}$ (C) $\frac{1}{13}$ (D) $\frac{1}{16}$ **Ans: D**
8. One-Fifth of a number is equal to $\frac{3}{8}$ of another number. The Difference of the Two numbers is 21. What is the smaller number?
(A) 24 (B) 27 (C) 32 (D) 42 **Ans: A**
9. If the numerator of a fraction is increased by 20% and the denominator be diminished by 10%, the value of the fraction is $\frac{16}{21}$. The original fraction is:
(A) $\frac{3}{5}$ (B) $\frac{4}{7}$ (C) $\frac{2}{3}$ (D) $\frac{5}{7}$ **Ans: B**
10. During a 5-day festival, the number of visitors tripled each day. If the festival opened on a Thursday with 345 visitors, what was the number of visitors the following Sunday?
(A) 1, 035 (B) 1, 725 (C) 3, 105 (D) 9, 315 **Ans: D**
11. If one number exceeds another number by 13 and the larger number is $\frac{3}{2}$ times the smaller number, then the smaller number is:
(A) 13 (B) 26 (C) 31 (D) 39 **Ans: B**
12. If the ratio of boys and girls in a school is 5:3. Which of the following could not be the number of students in the school?
(A) 512 (B) 416 (C) 224 (D) 178 **Ans: D**
13. The ratio of red to white marbel is 3:4 and white to green marbel is 5:6. What is the ratio of green to red marbles?
(A) 6:3 (B) 8:5 (C) 4:5 (D) 5:8 **Ans: B**
14. A man spent $\frac{1}{2}$ of his money and then lost $\frac{1}{4}$ of the remainder. He was left with Tk. 3600. How much did he start with?
(A) Tk. 8000 (B) Tk. 8600 (C) Tk. 9600 (D) Tk. 9200 **Ans: C**

15. The ratio of boys to girls in a class is $\frac{2}{5}$. If 2 boys leave and 4 girls join the class, the ratio of the boys to the girls becomes $\frac{1}{4}$. Originally how many girls were in the class?
(A) 16 (B) 20 (C) 21 (D) 24 **Ans: B**
16. The ratio of three numbers is 3 : 4 : 5 and the sum of their squares is 1250. The sum of the numbers is:
(A) 30 (B) 50 (C) 60 (D) 90 **Ans: C**
17. How much salt must we add to 10 grams of a 20% salt solution to strengthen it into a 50% solution?
(A) 5 gm (B) 3 gm (C) 6 gm (D) 4 gm **Ans: C**
18. 125 gallons of a mixture contains 20% water. What amount of additional water should be added such that the water content is raised to 25%?
(A) $\frac{15}{2}$ (B) $\frac{17}{2}$ (C) $\frac{19}{2}$ (D) $8\frac{1}{3}$ **Ans: D**

Solution of Student's Drill

1. বলা হয়েছে, কোনটি বড়?

Cross method এ solve করবো।

যেটা বড় হবে তার কাছের fraction বড়।

Option (A) ও option (B) থেকে পাই

$$\frac{5}{3} \cdot \frac{7}{4} = \frac{7}{4} \text{ বড়।}$$

আবার, B ও C তুলনা করে পাই B বড়।

আবার, B ও D তুলনা করে পাই B বড়।

∴ Ans: (B)

2. দশমিক সংখ্যার গুণনের ক্ষেত্রে সাময়িকভাবে দশমিক বাদ দিয়ে সবগুলো গুণ করবো। তারপর মোট যত ঘর আগে দশমিক আছে Result এ ততঘর আগে দশমিক দিবো। আর এটাই হবে Ans।
সুতরাং Ans. is option (A)।

3. A ও B তুলনা করে পাই, A ছোট।

আবার, A ও C তুলনা করে পাই, A ছোট।

আবার, A ও D তুলনা করে পাই, A ছোট।

∴ Ans: option (A)

4. Let, Total capacity = x

$$\therefore \frac{3x}{5} - \frac{x}{5} = 20$$

$$\Rightarrow \frac{3x - x}{5} = 20$$

$$\Rightarrow 2x = 5 \times 20$$

$$\Rightarrow x = 50 \text{ (Ans.)}$$

5. Let, properly = 6x Tk.

$$\therefore \text{son} = 6x \times \frac{2}{3} = 4x \text{ Tk.}$$

$$\text{Daughter} = 2x \times \frac{1}{2} = x$$

$$4x - x = 1500$$

$$\Rightarrow x = 500$$

$$\therefore \text{Property} = 6x = 6 \times 500 = 3000 \text{ (Ans.)}$$

6. Let, 3rd = x

$$\therefore 2^{\text{nd}} = 3x$$

$$1^{\text{st}} = 3 \times 3x = 9x$$

$$\therefore \text{Required fraction} = \frac{x}{13x} = \frac{1}{13} \text{ (Ans.)}$$

7. Let, 3rd = x

$$\therefore 2^{\text{nd}} = 3x$$

$$1^{\text{st}} = 4 \times 3x = 12x$$

$$\therefore \text{Required fraction} = \frac{x}{16x} = \frac{1}{16} \text{ (Ans.)}$$

8. Let, smaller = x

$$\therefore \text{Bigger} = 21 + x$$

$$\therefore \frac{1}{5} \times (21 + x) = \frac{3}{8} \times x$$

$$\Rightarrow 168 + 8x = 15x$$

$$\Rightarrow 168 = 7x$$

$$\therefore x = \frac{168}{7} = 24 \text{ (Ans.)}$$

9. Let, Fraction = $\frac{x}{y}$

$$\therefore \frac{x \times 1.20}{y \times .90} = \frac{16}{21}$$

$$\Rightarrow \frac{x}{y} = \frac{16}{21} \times \frac{.90}{1.20}$$

$$= \frac{16 \times 90}{21 \times 120} = \frac{4}{7} \text{ (Ans.)}$$

10. ১ম দিন যা থাকবে পরের দিন ৩ গুণ করে বৃদ্ধি পাবে।

$$\text{Thrusday} = 345$$

$$\text{Friday} = 3 \times 345$$

$$\text{Saturday} = 3 \times 3 \times 345$$

$$\text{Sunday} = 3 \times 3 \times 3 \times 345$$

$$= 27 \times 345 = 9315 \text{ (Ans.)}$$

11. Let, smaller = x \therefore Bigger = $13 + x$

$$13 + x = \frac{3}{2} \times x$$

$$\Rightarrow 26 + 2x = 3x \quad \therefore x = 26 \text{ (Ans.)}$$

12. B : G = 5 : 3

মোট ৪ ভাগ। সুতরাং মোট সংখ্যা ৪ এর গুণিতক হবে।

যেহেতু বলেছে কোনটি মোট সংখ্যা হতে পারবেনা। তাই ৪ দিয়ে

যাকে ভাগ যাবে না সেটাই হবে Ans। \therefore Ans. is (D).

13. $r : w = 3 : 4 = 3 \times 5 : 4 \times 5 = 15 : 20$

$$\underline{w : g = 5 : 6 = 4 \times 5 : 6 \times 4 = 20 : 24}$$

$$\therefore r : w : g = 15 : 20 : 24$$

$$\therefore g : r = 24 : 15 = 8 : 5 \text{ (Ans.)}$$

14. Let, Total money = $8x$

$$\therefore \text{spent} = \frac{1}{2} \times 8x = 4x$$

$$\text{Lost} = \frac{1}{4} \times 4x = x$$

$$\text{Left} = 8x - 5x = 3x$$

$$\therefore 3x = 3600 \Rightarrow x = 1200$$

$$\therefore \text{Total money} = 8x = 8 \times 1200 = 9600 \text{ (Ans.)}$$

15. B : G = d : 5

$$\text{Let, } B = 2x, g = 5x$$

$$\frac{2x - 2}{5x + 4} = \frac{1}{4}$$

$$\Rightarrow 8x - 8 = 5x + 4$$

$$\Rightarrow 3x = 12 \quad \therefore x = 4$$

$$\therefore \text{Girls} = 5x = 5 \times 4 = 20 \text{ (Ans.)}$$

16. Let, three number are $3x, 4x$ & $5x$

$$(3x)^2 + (4x)^2 + (5x)^2 = 1250$$

$$\Rightarrow 9x^2 + 16x^2 + 25x^2 = 1250$$

$$\Rightarrow 50x^2 = 1250$$

$$\Rightarrow x^2 = 25 \quad \therefore x = 5$$

$$\therefore \text{Sum of the three numbers}$$

$$= 3x + 4x + 5x = 12x = 12 \times 5 = 60 \text{ (Ans.)}$$

17. Salt = $10 \times 20\% = 2 \text{ gm}$

$$\therefore \text{water} = 8 \text{ gm}$$

Let, $x \text{ gm}$ salt will the added.

$$\therefore \frac{2 + x}{8} = \frac{50\%}{50\%} = \frac{1}{1}$$

$$\Rightarrow 2 + x = 8 \Rightarrow x = 6 \text{ (Ans.)}$$

18. Water = $125 \times 20\% = 25 \text{ gl}$

$$\text{Other} = 100 \text{ gl}$$

Let, $x \text{ gl}$ water will be added.

$$\therefore \frac{25 + x}{100} = \frac{25\%}{75\%} = \frac{1}{3}$$

$$\Rightarrow 75 + 3x = 100$$

$$\Rightarrow 3x = 25$$

$$\Rightarrow x = \frac{25}{3} = 8\frac{1}{3} \text{ (Ans.)}$$

Home Practice

1. One-month Jalil used $\frac{1}{6}$ of his monthly salary for a car payment and $\frac{1}{4}$ more than the car payment for rent. What fraction of his monthly salary did Jalil use that month for the car payment and rent combined?

(A) $\frac{5}{24}$

(B) $\frac{3}{8}$

(C) $\frac{7}{72}$

(D) $\frac{1}{2}$

Ans: B



2. Which of the following is the largest?

(A) $\frac{12}{15}$

(B) $\frac{11}{14}$

(C) $\frac{5}{7}$

(D) $\frac{9}{11}$

Ans: D

3. Find 8.23×10^9

(A) 0.00000000823

(B) 0.00000823

(C) 8.23

(D) 8230000000

Ans: D

4. If x is an integer and $(0.5) (.005) (.05) (.005) 10^x$ is an integer, what is the least possible value of x ?

(A) 8

(B) 9

(C) 10

(D) 11

Ans: B

5. The product of two numbers x & y is twice the sum of the numbers. Find $\frac{1}{x} + \frac{1}{y} = ?$

(A) $\frac{1}{2}$

(B) $\frac{1}{3}$

(C) $\frac{3}{4}$

(D) $\frac{1}{4}$

Ans: A

6. Morshed has d books, which is 3 times as many as Salam and $\frac{1}{2}$ as many as Roni. How many books do the three of them have altogether, in terms of d ?

(A) $\frac{5}{6}$

(B) $\frac{7}{3}$

(C) $\frac{10}{3}$

(D) $\frac{7}{2}d$

Ans: C

7. A son got $\frac{3}{5}$ th of his father's property. He sells $\frac{2}{3}$ rd of his share for Tk. 1,00,000. What is the value of the original property owned by his father?

a. 2,50,000

(B) 3,33,333

(C) 4,50,000

(D) 5,00,000

Ans: A

8. The denominator of a fraction exceeds its numerator by 7. If the numerator as well as the denominator is increased by 9, the fraction becomes $\frac{2}{3}$. Which of the following is the original fraction?

(A) $\frac{5}{12}$

(B) $\frac{4}{11}$

(C) $\frac{6}{13}$

(D) $\frac{4}{13}$

Ans: A

9. Engr. Goni went to market with certain amount of money. With this money he can buy either 50 apples or 40 pears. He retains 10% of the money for bus fare and buys 20 pears. How many apples can he buy?

(A) 18

(B) 30

(C) 15

(D) 20

Ans: D

10. Jar A has the twice the capacity of Jar B. Jar A and Jar B both are 50% full of water. If $\frac{1}{2}$ the water of Jar B poured into Jar A, then Jar A will be filled what fraction of its capacity?

(A) $\frac{1}{2}$

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

(C) $\frac{3}{4}$

(D) $\frac{7}{8}$

Ans: B

11. $\frac{3}{8}$ of a number is what fraction of 2 times the number?

(A) $\frac{3}{16}$

(B) $\frac{5}{6}$

(C) $\frac{3}{4}$

(D) $\frac{3}{5}$

Ans: A

12. Which of the following fractions is a result of the sum of an integer and its reciprocal?

(A) $\frac{15}{8}$

(B) $\frac{17}{5}$

(C) $\frac{36}{7}$

(D) $\frac{65}{8}$

Ans: D

13. Bowl S only contains marbles. If $\frac{1}{4}$ th of the marbles were removed, the bowl would be filled to $\frac{1}{2}$ of its capacity. If 100 marbles are added, the bowl would be full. How many marbles are in bowl S?

(A) 90

(B) 300

(C) 400

(D) 200

Ans: D



14. If $\frac{2}{3}$ of the number of women attending a certain art competition is equal to $\frac{1}{2}$ the number of men attending, what fraction of those attending are women?
(A) $\frac{2}{5}$ (B) $\frac{3}{7}$ (C) $\frac{5}{7}$ (D) $\frac{3}{4}$ **Ans: B**
15. The sum of two numbers is 40 and their difference is 4. The ratio of the number is:
(A) 22:9 (B) 11:9 (C) 11:18 (D) 21:19 **Ans: B**
16. If the ratio of boys and girls is 5:3 and there are 65 boys, how many girls are there?
(A) 33 (B) 35 (C) 39 (D) 38 **Ans: C**
17. The ratio of two is 7:3 and their difference is 36. What is the larger number?
(A) 63 (B) 66 (C) 69 (D) 70 **Ans: A**
18. If the ratio of boys and girls in a school is 5:3. Which of the following could not be the number of students in the school?
(A) 512 (B) 416 (C) 224 (D) 178 **Ans: D**
19. The ratio of girls to boys in a class is 3: 4. The number of students in the class could be any of the following except:
(A) 36 (B) 28 (C) 48 (D) 56 **Ans: A**
20. The ratio of red to white marble is 3:4 and white to green marble is 5:6. If there are 16 green marbles, Find the number of red marbles.
(A) 15 (B) 10 (C) 12 (D) 1000 **Ans: B**
21. The number of girls in a class is 5 times the number of boys. Which of the following can not be the total number of children in the class?
(A) 24 (B) 30 (C) 35 (D) 42 **Ans: C**
22. Two whole numbers whose sum is 64, which of the following cannot ratio of the numbers
(A) 5 : 3 (B) 7 : 1 (C) 3 : 4 (D) 9 : 7 **Ans: C**
23. A man spent $\frac{1}{2}$ of his money and then lost $\frac{1}{4}$ of the remainder. He was left with Tk. 3600. How much did he start with?
(A) Tk. 8000 (B) Tk. 8600 (C) Tk. 9600 (D) Tk. 9200 **Ans: C**
24. A sum of money is to be distributed among A, B, C, D in the proportion of 5 : 2 : 4 : 3. If C gets Tk 1,000 more than D, what is B's share?
(A) Tk. 500 (B) Tk. 1500 (C) Tk. 2000 (D) Tk. 3000 **Ans: C**
25. Last year the ratio of salary of X to Y and X to Z is 1:2 and 1:3 respectively. This year they all get \$1,000 increment. If Z is now drawing \$25,000. What is the salary of Y this year?
(A) \$15,000 (B) \$17,000 (C) \$17,500 (D) \$18,000 **Ans: B**
26. Two equal glasses are respectively one-third and one fourth full of milk. They are then filled up with water and the contents are mixed in a tumbler. Ratio of milk and water in tumbler is:
(A) 7:5 (B) 7:17 (C) 3:7 (D) 11:23 **Ans: B**
27. Three friends A, B, & C divide \$1,105 among them in such a way what if \$10, \$20 & \$15 are removed from the sums that A, B & C respectively, then the sums that they will get will be in the ratio of 11:18:24. How much did C receive?
(A) 495 (B) 510 (C) 480 (D) 375 **Ans: A**



28. The ratio of the number of boys to that of girls in a class is 5: 7. When 24 more boys enter, the ratio is reversed. How many girls are in the class?
(A) 25 (B) 35 (C) 32 (D) 26 Ans: B
29. The ratio of the number of boys and girls in a school is 3:2. If 20% of the boys and 25% of the girls are scholarship holders, what percent of the students are not scholarship holders?
(A) 56 (B) 70 (C) 78 (D) 85 Ans: C
30. Two numbers A and B are such that the sum of 5% of A and 4% of B is two-third of the sum of 6% of A and 8% of B. what is the ratio of A and B?
(A) 1:1 (B) 1:2 (C) 2:5 (D) 4:3 Ans: D
31. The ratio of salaries of A, B and C is 1:2:3. The salaries of B and C together are Tk. 6,000. By what percentage is the salary of C more than that of A.
(A) 10% (B) 200% (C) 300% (D) 600% Ans: B
32. If $x : y = 5 : 3$ then $8x - 5y : 8x + 5y = ?$
(A) 5 : 11 (B) 6 : 5 (C) 5 : 6 (D) 3 : 8 Ans: A
33. \$3660 is divided among X, Y & Z in such a way that if \$10, \$20 & \$30 are removed from the sums that X, Y & Z respectively, then the sums that they will get will be in the ratio of 3:4:5. How much did X receive?
(A) 890 (B) 905 (C) 910 (D) 915 Ans: C
34. In what ratio must tea at Tk. 62 per kg be mixed with tea at Tk. 72 per kg so that the mixture must be worth Tk. 64.50 per kg?
(A) 3 : 1 (B) 3 : 2 (C) 4 : 3 (D) 5 : 3 Ans: B
35. The present ratio of students to teachers at a certain school is 30 to 1. If the student enrollment were to increase by 50 students and the number of teachers were to increase by 5, the ratio of students to teachers would then be 25 to 1. What is the present number of teachers.
(A) 15 (B) 8 (C) 10 (D) 12 Ans: A
36. A solution of 27 gallons of acid contains 9 gallons of pure acid How much water in gallons, should be added to produce a 25 percent solution of this acid?
(A) $6\frac{3}{4}$ (B) 9 (C) $15\frac{3}{4}$ (D) 18 Ans: B
37. Siddika kabir invests \$2,400 in the Security National Bank at 5%. How much additional money must she invest at 8% so that the total annual income will be equal to 6% of her entire investment?
(A) \$2,400 (B) \$3,600 (C) \$1200 (D) \$3,000 Ans: C
38. In what ratio must a grocer mix varieties of tea worth Tk. 60 a kg and Tk. 65 a kg so that by selling tea mixture at Tk. 68.20 a kg he may gain 10%?
(A) 3 : 4 (B) 3 : 2 (C) 3 : 5 (D) 4 : 5 Ans: B
39. You are whipping up your uncle's famous honey chipotle BBQ sauce for a school fundraiser. The recipe calls for $\frac{3}{4}$ cup of sugar. You need to make 5 batches of sauce. How much sugar do you need?
A. $\frac{10}{2}$ B. $\frac{15}{4}$ C. $\frac{1}{2}$ D. $\frac{1}{4}$ Ans: B



40. Express 0.24 into simple fraction:

A. $\frac{2}{3}$

B. $\frac{1}{7}$

C. $\frac{8}{33}$

D. $\frac{9}{37}$

Ans: C

41. The salamis A, B, C are in the ratio 2 : 3 : 5. If the increments of 15%, 10% and 20% are allowed respectively in their salaries, then what will be new ratio of their salaries?

A. 3:3:10

B. 10:11:20

C. 23:33:60

D. 10:1:2

Ans: C

42. In a class, the number of boys is more than the number of girls by 12% of the total students. The ratio of boys to girls is:

A. 11:14

B. 14:11

C. 25:28

D. 28:25

Ans: D

43. A man spends $\frac{3}{5}$ of his income and still saves Tk. 600. His income is-

A. 1000

B. 1200

C. 1500

D. 2000

Ans: C

44. If $P : Q = 3 : 2$, $P : R = 2 : 7$, then what is the value of $Q : R$?

A. 3 : 7

B. 2 : 7

C. 4 : 21

D. 4 : 9

Ans: C

45. If the ratio of two numbers is 7 : 8 and their product is 1400, then the smallest number is:

A. 35

B. 42

C. 49

D. 70

Ans: A

46. You need $\frac{4}{5}$ cups of water for a recipe. You accidentally put $\frac{1}{3}$ cups into the mixing bowl with the dry ingredients. How much more water in cups do you need to add?

A. $\frac{2}{3}$ cups

B. $\frac{1}{15}$ cups

C. $\frac{7}{15}$ cups

D. $\frac{7}{16}$ cups

Ans: C

47. What must be added to each item of the ratio 7 : 13 so that the ratio becomes 2 : 3?

A. 2

B. 3

C. 4

D. 5

Ans: D

48. If a school has 24 teachers and 480 students, what is the ratio of teachers to students?

A. 1:21

B. 1:20

C. 1:23

D. 1:24

Ans: B

49. In a certain set of numbers, the ratio of integers to non-integers is 1:4. What percent of the numbers in the set are integers?

A. 20%

B. 25%

C. 30%

D. 35%

Ans: A

50. If $A : B = 3 : 5$ and $B : C = 2 : 5$, then what is equivalent to $A : B : C$?

A. 3:5:5

B. 6:10:5

C. 6:10:25

D. 10:15:25

Ans: C

51. If $\frac{2}{3}$ of the workers in an office are nonsmokers, what is the ratio of smokers to nonsmokers?

A. 2:5

B. 1:2

C. 3:5

D. 2:3

Ans: B

52. Juan sold $\frac{1}{3}$ of the books in the store during the morning shift. On the evening shift, Marcella sold $\frac{3}{4}$ of the remaining stock, which left 10 books. How many books were there to begin with?

A. 50

B. 120

C. 80

D. 60

Ans: D

53. If you need 98 ounces of iron and 2 ounces of carbon to make a sheet of steel. How much iron you need in ounces to make $\frac{1}{2}$ sheet steel? [BUP (FBS): 2021-22]

A. 98

B. 50

C. 49

D. 198

Ans: C



54. Shima has $\frac{4}{5}$ th of a tank of fuel in his car. He uses $\frac{1}{10}$ th fraction of a tank per day. How many days will his fuel last? [BUP (FBS): 2021-22]
A. 2 days B. 6 days C. 9 days D. 8 days **Ans: D**
55. A vessel has total 35 liters juice. Ratio of mango, lemon and Strawberry is 2:5:7. How much lemon mixed in the juice? [BUP (FBS): 2020-21]
A. 12 liter B. 12.5 liter C. 13 liter D. 13.5 liter **Ans: B**
56. Two numbers are such that the ratio between them is 4 : 7. If each is increased by 4, the ratio becomes 3:5. The larger number is- [BUP (FBS): 2020-21]
A. 64 B. 36 C. 48 D. 56 **Ans: D**
57. The ratio of salaries of A, B and C is 1:2:3. The salaries of B and C together are Tk. 6000. By what percentage is the salary of C more than that of A. [BUP (FBS): 2020-21]
A. 100% B. 200% C. 300% D. 600% **Ans: B**
58. On Monday a person mailed 8 packages weighting an average of $\frac{99}{8}$ pounds and on Tuesday 4 packages weighting an average of $\frac{61}{4}$ pounds. What was the average weight on pounds of all the packages the person mailed on both days? [BUP (FBS): 2019-20]
A. $\frac{111}{4}$ B. $\frac{40}{13}$ C. $\frac{27}{13}$ D. $\frac{109}{4}$ **Ans: B**

