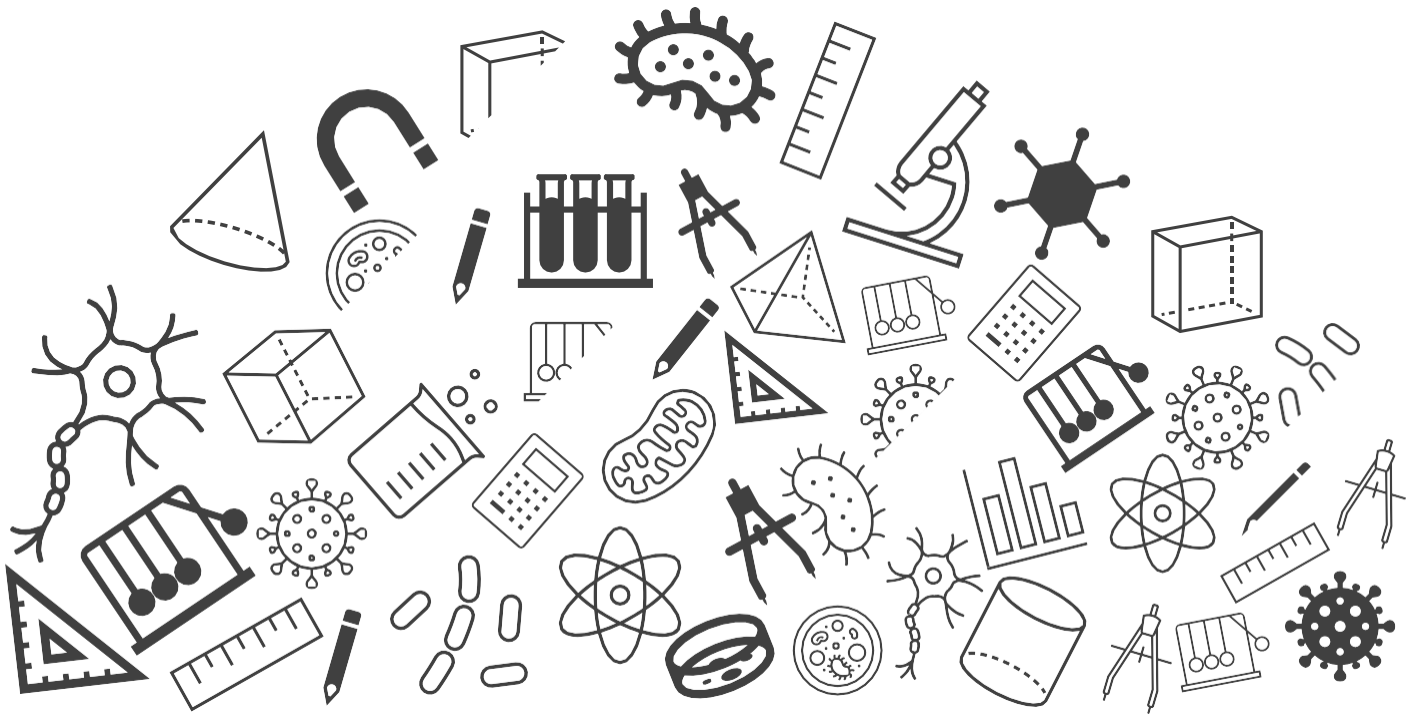
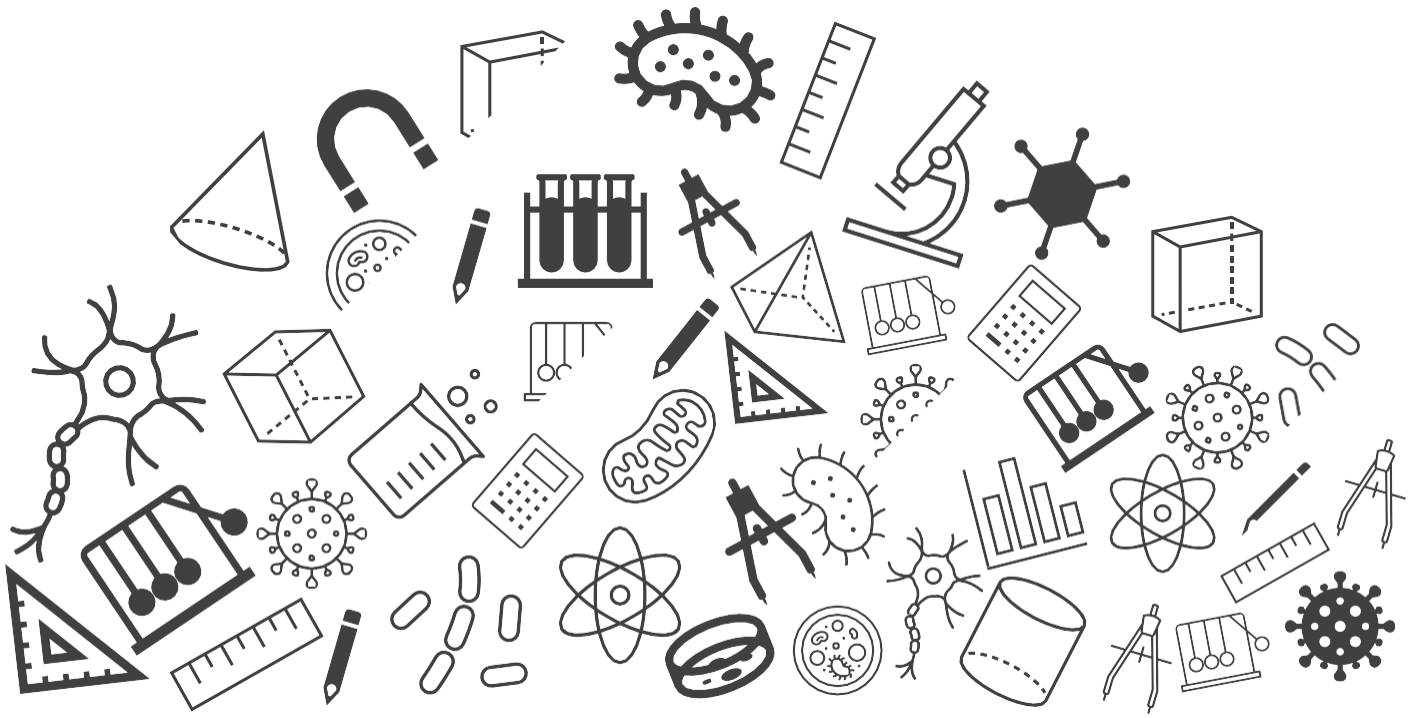
Grade 06: Maths
Exam Important Questions



Fractions



1. Naina was given 1 $\frac{1}{2}$ piece of cake and Najma was given 1$\frac{1}{3}$ piece of cake. Find the total amount of cake was given to both of them.
[2 marks]

Fraction of cake Naina got = 1$\frac{1}{2}$ = $\frac{3}{2}$

Fraction of cake Najma got = 1$\frac{1}{3}$ = $\frac{4}{3}$

Total amount of cake given to both of them = $\frac{3}{2}$ + $\frac{4}{3}$
[0.5 mark]

= $\frac{(3 \times 3) + (4 \times 2)}{6}$
[0.5 mark]

= $\frac{(9 + 8)}{6}$

= $\frac{17}{6}$

= 2$\frac{5}{6}$
[1 mark]

2. The fish caught by Neetu was of weight $3\frac{3}{4}$ kg and the fish caught by Narendra was of weight $2\frac{1}{2}$ kg. How much more did Neetu's fish weight than that of Narendra?
[3 marks]

Solution:

Given :

The weight of fish caught by Neetu $= 3\frac{3}{4}$ kg

The weight of fish caught by Narendra $= 2\frac{1}{2}$ kg

Difference between the weight of Neetu's fish and Narendra's fish $= (3\frac{3}{4} - 2\frac{1}{2})$kg

[0.5 mark]

We can express a mixed fraction as an improper fraction as $\frac{(\text{Whole} \times \text{Denominator}) + \text{Numerator}}{\text{Denominator}}$.

Difference between the weight of Neetu's fish and Narendra's fish

$= 3\frac{3}{4} - 2\frac{1}{2} = \frac{3 \times 4 + 3}{4} - \frac{2 \times 2 + 1}{2}$

$= (\frac{15}{4} - \frac{5}{2})$

Now, the LCM of the denominator of the fractions $\frac{15}{4}$ and $\frac{5}{2}$ i.e. the LCM of 4 and 2 is 4.

[0.75 mark]

$\therefore$ Difference between the weight of Neetu's fish and Narendra's fish

$= \frac{15 \times 1}{4 \times 1} - \frac{5 \times 2}{2 \times 2} = \frac{15}{4} - \frac{10}{4}$

$= \frac{15 - 10}{4} = \frac{5}{4}$ kg

[0.75 mark]

We can express an improper fraction as a mixed fraction by dividing the numerator by denominator to obtain the quotient and the remainder.

Then the mixed fraction will be written as $\text{Quotient}\frac{\text{Remainder}}{\text{Divisor}}$.

$\begin{bmatrix} \because & 4)5(1 \\ & \frac{4}{1} \end{bmatrix}$

Difference between the weight of Neetu's fish and Narendra's fish $= 1\frac{1}{4}$ kg

So, Neetu's fish weighed $1\frac{1}{4}$ kg more than that of Narendra.

[1 mark]

3. Asha and Samuel have bookshelves of the same size partly filled with books. Asha's shelf is $\frac{5}{6}$th full and Samuel's shelf is $\frac{2}{5}$th full. Whose bookshelf is more full and by what fraction?
[3 marks]

As per the question,
Asha and Samuel have bookshelves of the same size.
Asha's shelf is $\frac{5}{6}$th full.
Samuel's shelf is $\frac{2}{5}$th full.

We have to find out whose bookshelf is more full. Now, it is given that the bookshelves of both Asha and Samuel have the same size.
So to calculate whose bookshelf is more full we have to find which fraction among $\frac{5}{6}$ and $\frac{2}{5}$ is greater.
$\frac{5}{6} = \frac{5}{6} \times \frac{5}{5} = \frac{25}{30}$ and $\frac{2}{5} = \frac{2}{5} \times \frac{6}{6} = \frac{12}{30}$
[$\because$ L.C.M. of 6 and 5 is 30]

$\therefore \frac{25}{30} > \frac{12}{30}$
$\Rightarrow \frac{5}{6} > \frac{2}{5}$
[1.5 marks]

$\therefore$ Asha's bookshelf is more covered than Samuel.

To calculate by what fraction is the bookshelf more full, we should calculate the difference between the two fractions.
The fraction by which Asha's bookshelf is covered more than Samuel's is =
$\frac{5}{6} - \frac{2}{5} = \frac{25}{30} - \frac{12}{30} = \frac{13}{30}$
[1.5 marks]

4. Ramesh had 20 pencils, Sheelu had 50 pencils and Jamaal had 80 pencils. After 4 months, Ramesh used up 10 pencils, Sheelu used up 25 pencils and Jamaal used up 40 pencils. What fraction did each used up? Check if each has used up an equal fraction of her/his pencils?
[2 marks]

According to the question,
Total number of pencils Ramesh had $= 20$

Number of pencils used by Ramesh $= 10$

$\therefore$ Fraction of pencils used by Ramesh $= \frac{10}{20} = \frac{1}{2}$
[0.5 mark]

Total number of pencils Sheelu had $= 50$

Number of pencils used by Sheelu $= 25$

$\therefore$ Fraction of pencils used by Sheelu $= \frac{25}{50} = \frac{1}{2}$
[0.5 mark]

Total number of pencils Jamaal had $= 80$

Number of pencils used by Jamaal $= 40$

$\therefore$ Fraction of pencils used by Jamaal $= \frac{40}{80} = \frac{1}{2}$
[0.5 mark]

Yes, each has used up an equal fraction of pencils i.e $\frac{1}{2}$
[0.5 mark]

Fractions

5. compare the following fraction using appropriate sign (>,<,=)

$\frac{3}{6} \square \frac{3}{4}$
[1 mark]

The comparision of two fractions can be done only if they are like fractions.
So,converting the two fractions into like fractions:
$\frac{3\times2}{6\times2} = \frac{6}{12}$

$\frac{3\times3}{4\times3} = \frac{9}{12}$
Now, we can say that $\frac{6}{12}$ is lesser than $\frac{9}{12}$.
[1 mark]

6. Re-arrange the given fractions in descending order:
$\frac{3}{7}, \frac{4}{21}, \frac{11}{42}, \frac{13}{28}$
[3 marks]

LCM of $7, 21, 42$, and $28 = 2 \times 2 \times 3 \times 7 = 84$

$\frac{3}{7} = \frac{3 \times 12}{7 \times 12} = \frac{36}{84}$
[0.5 mark]

$\frac{4}{21} = \frac{4 \times 4}{21 \times 4} = \frac{16}{84}$
[0.5 mark]

$\frac{11}{42} = \frac{11 \times 2}{42 \times 2} = \frac{22}{84}$
[0.5 mark]

$\frac{13}{28} = \frac{13 \times 3}{28 \times 3} = \frac{39}{84}$
[0.5 mark]

Since $39 > 36 > 22 > 16$,
$\frac{39}{84} > \frac{36}{84} > \frac{22}{84} > \frac{16}{84}$
$\Rightarrow \frac{13}{84} > \frac{3}{7} > \frac{11}{42} > \frac{4}{21}$
[1 mark]

Fractions

7. Write the natural numbers from 102 to 113. What fraction of them are prime numbers? [2 marks]

Natural numbers from 102 to 113:

$102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113$

Total number of Natural numbers from 102 to $113 = 12$
[0.5 mark]

Prime numbers from 102 to 113:

$103, 107, 109, 113$

Total number of prime numbers from 102 to $113 = 4$
[0.5 mark]

Hence, fraction of prime numbers from 102 to $113 = \frac{4}{12} = \frac{1}{3}$
[1 mark]

8. There are 3 red balloons, 2 white and 4 blue balloons and one balloon of each colour bursts. What fraction of the total number of balloons are now blue?
[3 Marks]

Solution:
Initially there are

3 red balloons
2 white balloons
4 blue balloons

After bursting, there are

Red balloons = 3 -1 = 2
White balloon = 2- 1 = 1
Blue balloons =4 -1 = 3 **[1 mark]**

Now ,the total number of balloons = 2+1+3
= 6 **[0.5 marks]**

We know that fraction = $\frac{Part}{Whole}$
So the fraction of blue balloons = $\frac{Blue\ \ Balllons}{Total\ \ Balloons}$
[1 Mark]

Therefore, the fraction of blue balloons = $\frac{3}{6}$
[0.5 Mark]

9. Pair up the equivalent fractions from each column.

(a) 

(b) 

(c) 

(i) 

(ii) 

(iii) 

[3 marks]

Fractions

Let's write the fraction for the figures given in column 1.

(a) 1/2 (b) 4/6 (c) 3/4
[1 mark]

Now let's write the fraction for the figures given in column 2.

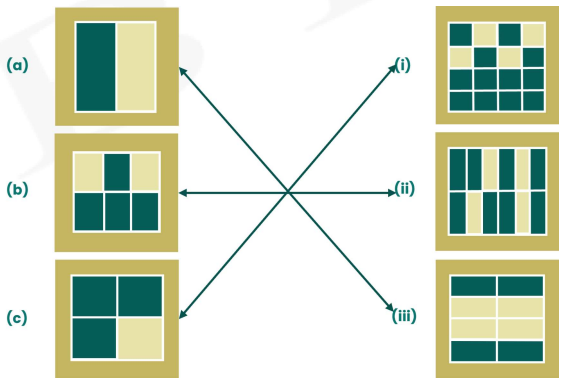
(i) 12/16 (ii) 8/12 (iii) 4/8
[1 mark]

Now, the equivalent fractions are

(a) 1/2 → (iii) 4/8 = 1/2

(b) 4/6 = 2/3 → (ii) 8/12 = 2/3

(c) 3/4 → (i) 12/16 = 3/4



[1 mark]

10. What fraction of a day is passed in 6 hours? Express the fraction in the simplest form.
[2 marks]

There are 24 hours in a day.
$\Rightarrow$ 6 hours of a day
$= \frac{6}{24}$
[1 mark]

Since 6 is the highest common factor of 6 and 24,
$\Rightarrow \frac{6 \div 6}{24 \div 6} = \frac{1}{4}$

Therefore, $\frac{1}{4}$ is the simplest form of $\frac{6}{24}$.
[1 mark]