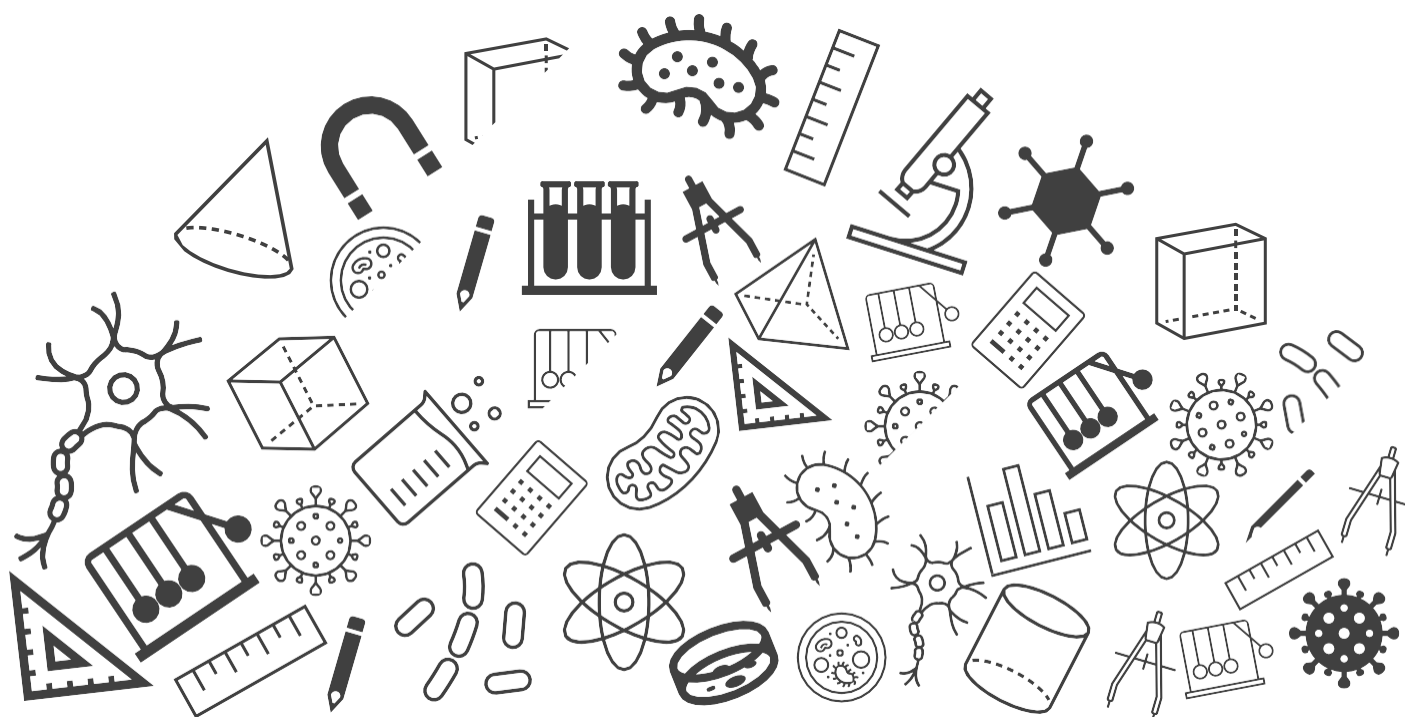




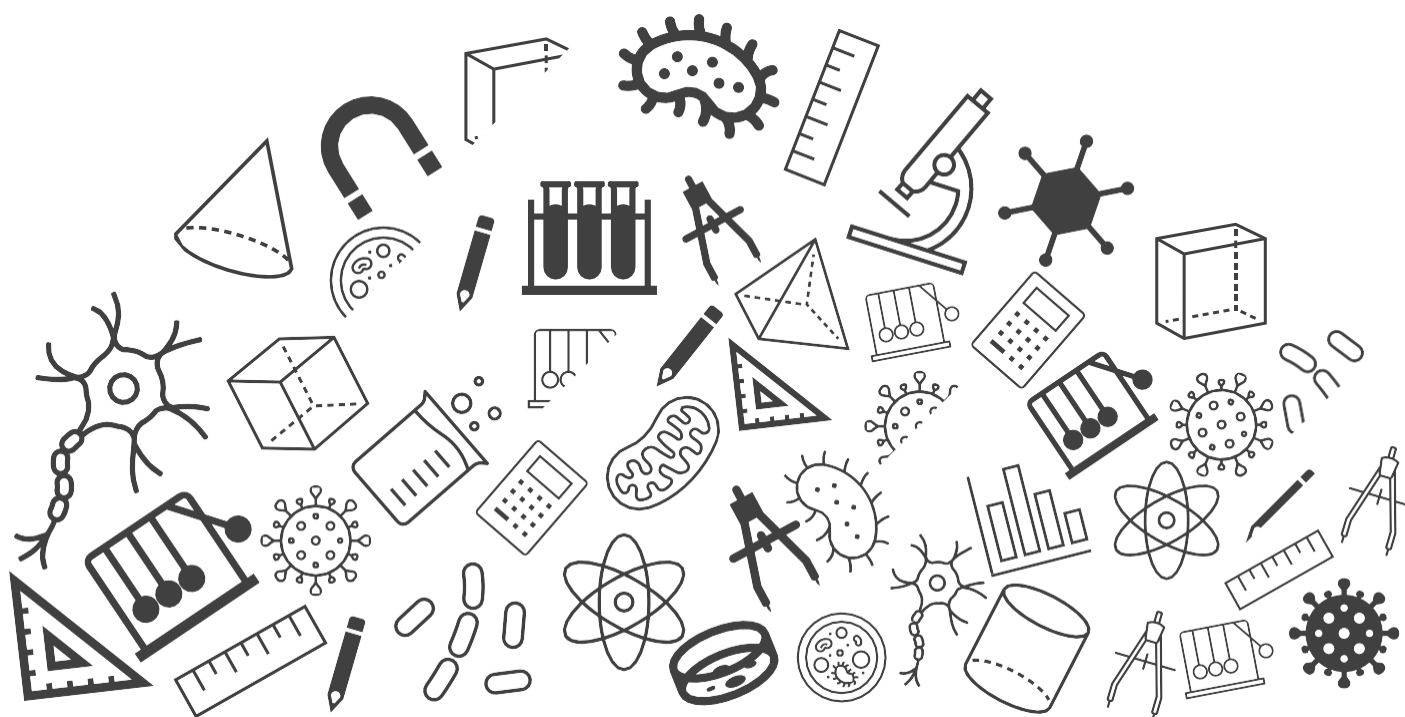
Grade 07: Maths

Exam Important Questions





Simple Equations



Simple Equations

Topic : Exam Important Questions

1. Frame equations for the given statements:

S.No.	Statement	Equation
(a)	4 subtracted from 7 times a gives 32.	
(b)	3 is 7 more than two-fifth of y .	
(c)	The number b divided by 5 gives 6.	
(d)	8 times a number x is equal to three more than 5 times the same number.	
(e)	3 less than 4 times a number p is 5 more than twice the same number.	

[5 marks]

(a) When 4 is subtracted from 7 times a , you get 32

$$7a - 4 = 32$$

[1 mark]

(b) 3 is 7 more than two fifths of y .

$$\left(\frac{2}{5}\right)y + 7 = 3$$

[1 mark]

(c) The number b divided by 5 gives 6.

$$\frac{b}{5} = 6$$

[1 mark]

(d) 8 times a number x is equal to three more than 5 times the same number.

$$8x = 3 + 5x$$

[1 mark]

(e) 3 less than 4 times a number y is 5 more than twice the same number.

$$4p - 3 = 5 + 2p$$

[1 mark]

Simple Equations

2. Solve the following equation by trial and error method:

$$3m - 14 = 4$$

[2 marks]

Solution:

Putting $m = 3$ in L.H.S, $3(3) - 14 = 9 - 14 = -5$

$\therefore -5 \neq 4$, $m = 3$ is not the solution.

Putting $m = 4$ in L.H.S, $3(4) - 14 = 12 - 14 = -2$

$\therefore -2 \neq 4$, $m = 4$ is not the solution.

Putting $m = 5$ in L.H.S, $3(5) - 14 = 15 - 14 = 1$

$\therefore 1 \neq 4$, $m = 5$ is not the solution.

Putting $m = 6$ in L.H.S, $3(6) - 14 = 18 - 14 = 4$

$\therefore 4 = 4$, $m = 6$ is the solution.

[2 marks]

3. Find the value of 'q' in the equation, $\frac{q}{4} + 7 = 5$, using the method of balancing.

[2 marks]

Solution:

Subtract 7 from both sides.

$$\frac{q}{4} + 7 = 5$$

$$\frac{q}{4} + 7 - 7 = 5 - 7$$

$$\frac{q}{4} = -2$$

[1 mark]

Multiply 4 on both sides.

$$\frac{q}{4} \times 4 = -2 \times 4$$

$$q = -8$$

[1 mark]

Simple Equations

4. Solve the following equation using the method of transposition:

$$16 = 4 + 3(t + 2)$$

[3 marks]

In the method of transposition, we transpose the variables to one side and the constants to the other side. Then, we will simplify the expression and solve for the variable.

$$16 = 4 + 3(t + 2)$$

Step 1: Transpose the variable to one side and the constants to the other side.

$$4 + 3(t + 2) = 16$$

$$\Rightarrow 3(t + 2) = 16 - 4$$

$$\Rightarrow t + 2 = \frac{(16 - 4)}{3}$$

$$\Rightarrow t = \frac{(16 - 4)}{3} - 2$$

[2 marks]

Step 2: Simplify the expression and solve for the variable.

$$t = \frac{(16 - 4)}{3} - 2$$

$$= \frac{12}{3} - 2 = 4 - 2 = 2$$

$$t = 2$$

[1 mark]

Simple Equations

5. What does a duck do when it flies upside down?

The answer to this riddle is hidden in the equation given below:

If $i + 69 = 70$, then $i = ?$

If $8u = 6u + 8$, then $u = ?$

If $4a = -5a + 45$, then $a = ?$

If $4q + 5 = 17$, then $q = ?$

If $-5t - 60 = -70$, then $t = ?$

If $\frac{1}{4}s + 98 = 100$, then $s = ?$

If $\frac{5}{3}p + 9 = 24$, then $p = ?$

If $3c = c + 12$, then $c = ?$

If $3(k + 1) = 24$, then $k = ?$

For riddle answer: substitute the number for the letter it equals.

$\frac{1}{2} \div \frac{3}{4} = \frac{5}{6} \div \frac{7}{8} = \frac{9}{4}$ [5 marks]

Simple Equations

Step 1: Find the value of each letter

Given: $i + 69 = 70$

$$\Rightarrow i = 70 - 69 = 1$$

Given: $8u = 6u + 8$

$$\Rightarrow 2u = 8$$

$$\Rightarrow u = \frac{8}{2} = 4$$

Given: $4a = -5a + 45$

$$\Rightarrow 9a = 45$$

$$\Rightarrow a = \frac{45}{9} = 5$$

Given: $4q + 5 = 17$

$$\Rightarrow 4q = 17 - 5 = 12$$

$$\Rightarrow q = \frac{12}{4} = 3$$

Given: $-5t - 60 = -70$

$$\Rightarrow -5t = -70 + 60 = -10$$

$$\Rightarrow t = \frac{-10}{-5} = 2$$

Given: $\frac{1}{4}s + 98 = 100$

$$\Rightarrow \frac{1}{4}s = 2$$

$$\Rightarrow s = 8$$

Given: $\frac{5}{3}p + 9 = 24$

$$\Rightarrow \frac{5}{3}p = 24 - 9 = 15$$

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

Given: $3c = c + 12$

$$\Rightarrow 2c = 12$$

$$c = \frac{12}{2} = 6$$

Given: $3(k + 1) = 24$

$$\Rightarrow k + 1 = \frac{24}{3} = 8$$

$$\Rightarrow k = 8 - 1 = 7$$

Hence the values are:

$$i = 1, u = 4, a = 5, q = 3, c = 6, r = 8, p = 9, c = 6, k = 7$$

[9 × 0.5 marks]

Simple Equations

Step 2: Substitute the values

I	T	Q	U	A	C	K	S	U	P
1	2	3	4	5	6	7	8	4	9

[0.5 mark]

6. If a number is multiplied by 5 and 5 is added to it, then the result is equal to 50.

Find the number.

[2 marks]

Let the number be x .

According to the question,

$$5 \times x + 5 = 50$$

[1 mark]

$$5 \times x = 50 - 5$$

$$5 \times x = 45$$

$$x = 45 \div 5$$

$$x = 9$$

[1 mark]

7. Set up equation and solve it to find the unknown number in the following case:

Anwar thinks of a number. If he takes away 7 from $\frac{5}{2}$ of the number, the result is $\frac{11}{2}$

[3 marks]

Solution:

Let the number be x .

According to the question,

$$\frac{5}{2}x - 7 = \frac{11}{2}$$

[1 mark]

$$\Rightarrow \frac{5}{2}x = \frac{11}{2} + 7$$

$$\Rightarrow \frac{5}{2}x = \frac{11+14}{2}$$

$$\Rightarrow \frac{5}{2}x = \frac{25}{2}$$

$$\Rightarrow 5x = \frac{25 \times 2}{2}$$

$$\Rightarrow 5x = 25$$

$$\Rightarrow x = \frac{25}{5}$$

$$\Rightarrow x = 5$$

[2 marks]

Simple Equations

8. The perimeter of a rectangular swimming pool is 64m. If its length and breadth are in the ratio of 5 : 3, find the length of the pool.

[3 marks]

Perimeter of swimming pool = 64m (Given)

We know that,

Perimeter = 2(length + breadth). Since length and breadth are in the ratio 5:3,

length = 5x and breadth = 3x

[0.5 mark]

Substituting in the formula for perimeter, we get

$$64 = 2(5x + 3x)$$

$$8x = 32$$

$$x = 4$$

[2 marks]

Length of the swimming pool = 5x = 5 × 4 = 20m

[0.5 mark]