



## MATHS

### BOOKS - HT Olympiad Previous Year Paper

### IMO QUESTION PAPER 2018-19 SET B

#### Mathematical Reasoning

1. Find the sum of  $-59, -41, 73, -92, 81, -(-41)$  and  $-3$  .

A. 3

B. 0

C. 1

D.  $-2$

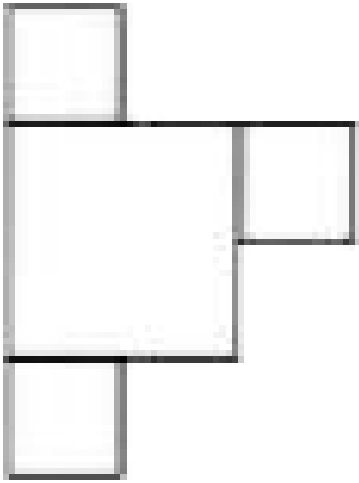
**Answer: B**



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2. The given figure is made up of one big square of side 5 cm and 3 identical small squares of side  $x$  cm each. Find

the perimeter of the figure in terms of  $x$ .



- A.  $(20 + 6x)$ cm
- B.  $(20 + 5x)$  cm
- C.  $(18 + 7x)$  cm
- D.  $(20 + 9x)$  cm

**Answer: A**



3. Which of the following figures does not have any line of symmetry?



A.



B.



C.



D.

**Answer: D**



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4. The product of a number and the sum of  $2\frac{1}{5}$  and  $\frac{9}{5}$  is 76 . Find the number.

A. 20

B. 21

C. 19

D. 18

**Answer: C**



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5. If 60 is divided into two parts in the ratio 2 : 3, then the difference between those two parts is

A. 10

B. 12

C. 5

D. 18

**Answer: B**



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6. The algebraic expression for the statement 'One-fifth of a number  $x$  is subtracted from the sum of  $b$  and thrice

of c' is

A.  $3(b + c) - \frac{x}{5}$

B.  $(b + 3c) - \frac{x}{5}$

C.  $\frac{x}{5} - (b + 3c)$

D.  $\frac{x}{5} - 3(b - 3c)$

**Answer: B**



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7. The given table shows the number of chapatis Ms sharma made on each day in a week.

Days	Number of chapatis
Monday	7
Tuesday	6
Wednesday	4
Thursday	4
Friday	7
Saturday	6
Sunday	4

How many chapatis did she make in the whole week ?

- A. 42
- B. 67
- C. 57
- D. 47

**Answer: C**



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8. The given table shows the number of chapatis Ms sharma made on each day in a week.

Days	Number of chapatis
Monday	/// IIII
Tuesday	/// ///
Wednesday	///
Thursday	IIII
Friday	/// IIII
Saturday	/// /// II
Sunday	/// III

If each chapati was made using 9g of flour, then quantity of flour used on Friday was \_\_\_\_\_ g.

A. 100

B. 81

C. 90

D. 99

**Answer: B**



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**9. Find the value of  $896.72 \times 0.15$  correct to the nearest tenths.**

A. 134.51

B. 134.6

C. 134.61

D. 134.5

**Answer: D**



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**10.** Find the value of p and q respectively which satisfies the given equation.

$$p\frac{1}{3} + q\frac{1}{3} = 7\frac{2}{3}$$

A. 4,8

B. 2,3

C. 3,4

D. 3,5

**Answer: C**





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11. A quadrilateral shaped photo frame has all sides equal. Which of the following is not a possible shape for the photo frame ?

A. Square

B. Trapezium

C. Rhombus

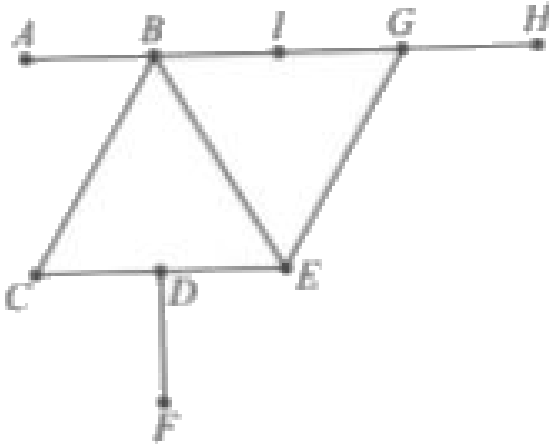
D. None of these

**Answer: B**



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12. How many line segments are there in the given figure ?



A. 17

B. 20

C. 19

D. 18

**Answer: A**





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13. If a line segment measuring 28.254 cm is divided into three equal parts, then the sum of the measure of the two parts is \_\_\_\_\_.

A. 14.112 cm

B. 15.646cm

C. 19.264 cm

D. 18.836 cm

**Answer: D**



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14. Divide the place value of 5 in 256798 by 1 less than the predecessor of 10002.

A. 501

B. 50

C. 5001

D. 5

**Answer: D**



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15. How many degrees are there in one-third of one-fourth of one complete turn ?

A.  $30^\circ$

B.  $60^\circ$

C.  $90^\circ$

D.  $120^\circ$

**Answer: A**



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**16.** Find the area of the unshaded part of the given figure.





17. If  $m:n = 3:7$ , then  $(6m-2n):(5m+3n)$  is equal to

A. 1:9

B. 2:45

C. 9:18

D. 4:123

**Answer: A**



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18. The number 90406092 is written in International System of Numeration as

- A. Nine crore forty lakh sixty thousand ninety two
- B. Ninety million forty lakh six thousand ninety two
- C. Ninety million four hundred six and ninety two
- D. Ninety million four hundred six thousand ninety two

**Answer: D**



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**19.** A number is always divisible by 180, if

- A. It is divisible by both 45 and 2.
- B. It is divisible by both 36 and 5.

C. It is divisible by both 18 and 30.

D. All of these.

**Answer: B**



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**20.** Which of the following options is incorrect ?

A.  $\frac{3}{4} > \frac{2}{3}$

B.  $\frac{4}{5} > \frac{1}{3}$

C.  $\frac{9}{7} > 1$

D.  $\frac{1}{2} < \frac{1}{4}$

**Answer: D**



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## Everyday Mathematics

1. Samiara bought a raw papaya weighing 8 kg 300 g. Out of this, she gave 2 kg 200 g to her tenant . How much papaya is left with her ?

A. 5 kg 10g

B. 5 kg 100 g

C. 6 kg 100 g

D. 6 kg 10 g

**Answer: C**



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2. A milkman supplies 34 L of full cream milk and 54 L of toned milk everyday in Palam Vihar. The toned milk costs ₹ 48 per litre and full cream milk costs ₹ 56 per litre. How much money the milkman will earn in the month of June?

A. Rs. 124640

B. Rs. 134880

C. Rs. 101732

D. Rs. 145650

**Answer: B**



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3. Four mobile phone commence vibrating together and vibrate at an intervals of 16 secs, 9 secs, 8 secs and 4 secs respectively . In 12 minutes, how many times will they vibrate together ?

A. 7

B. 4

C. 8

D. None of these

**Answer: D**



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4. From Shanti Niwas, Mr Saxena takes a left turn and walks 87 steps to reach the community hall . One day, by mistake he turns to right and after walking 35 steps he realised that he is walking in the opposite direction . How many steps he has to walk back to reach the community hall ?

A. 122

B. 52

C. 59



D. 120

**Answer: A**



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5. Vipin, Tushar and Vikas are living in a room on rent . In a month Tushar decided to pay one-fifth of the total rent and Vikas decided to pay two-fourth of the total rent. How much will Vipin pay, if the rent of the room is Rs. 12500 per month ?

A. Rs. 6250

B. Rs.3750

C. Rs.2500

D. Rs.2560

**Answer: B**



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6. A bag contains one rupee, two rupees and 50 paise coins in the ratio 5:6:8. If the total amount is Rs.420, then find the total number of coins.

A. 798

B. 789

C. 987

D. 987

**Answer: A**



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7. Manju runs around a rectangular park of length 35 m and breath 20 m. Meenu runs around a square park of side 30 m. Who covers less distance and by how much if Meenu takes 4 rounds and Manju takes 3 rounds completely ?

A. Meenu, 150 m

B. Manju, 120 m

C. Manju, 150 m

D. Meenu, 120 m

**Answer: C**



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**8.** A bus starts its journey at 5:30 a.m. and reaches its destination at 9:15 p.m. with a stoppage time of 2 hours. Find the ratio of the stoppage time to the total journey period.

A. 12: 95

B. 8: 63

C. 4: 73

D. 9: 85

**Answer: B**



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9. Mr Ahuja purchased two Maths books for Rs. 167.50 each, one Science books for Rs.1375.75 and four Computer Science books for Rs.168.55 each . He gave 5 notes of Rs. 500 each to the shopkeeper . How much amount will he get back ?

A. Rs. 335

B. Rs. 674.2

C. Rs.175.50

D. Rs.115.05

**Answer: D**



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**10.** Find the number of envelopes that can be made out of a sheet of paper 384 cm by 168 cm, if each envelope requires a piece of paper of size 16 cm by 12 cm.

A. 340

B. 344

C. 336

D. 342

**Answer: C**





**11.** Study the given statements carefully. State T for true and 'F' for false and select the correct option.

(i) If a number is a factor of each of the given two numbers, then it must be factor of their a difference.

(ii) If a number is divisible by another number, then it must be divisible by each of the factors of that number.

(iii) If a number is divisible by another number, then it is also divisible by all the multiples of that number.

(iv) No prime number other than 2 is even but every odd number is necessarily a prime number.

A. (i) T (ii) F (iii) T (iv) F

B. (i) T (ii) T (iii) F (iv) F

C. (i) F (ii) T (iii) F (iv) T

D. (i) F (ii) F (iii) F (iv) F

**Answer: B**



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**12.** Solve the following and select the correct option.

(i)

$$-\left(-5\frac{2}{3}\right) \text{ of } 6\frac{3}{8} - 0.696 \times 10.00 + 3\frac{5}{4} + (-6.663)$$

(ii)

$$4\frac{3}{5} - \left(-4\frac{1}{6}\right) + \left(-3\frac{7}{6}\right) + \frac{(-6)}{7} - \left(-1\frac{4}{5}\right) + 4\frac{5}{7}$$



A. (i) 26.752

(ii)  $10\frac{9}{35}$

B. (i) 26.767

(ii)  $12\frac{3}{45}$

C. (i) 28.837

(ii)  $10\frac{9}{35}$

D. (i) 26.752

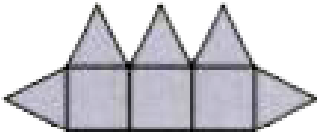
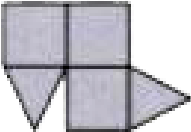
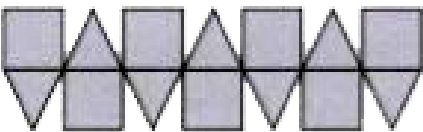
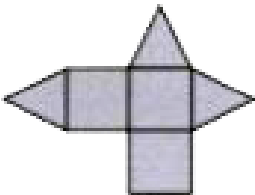
(ii)  $6\frac{19}{35}$

**Answer: A**



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13. Select the incorrect match, if figures (not drawn to scale) are made up of identical squares and identical equilateral triangles of side 3 cm each.

Figures	Perimeter (in cm)
(a) 	39
(b) 	30
(c) 	105
(d) 	36



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14. Find the value of P, Q, R and S.

Shapes	Sum of number of faces and vertices	Difference of number of edges and vertices
Hexagonal Prism	P	Q
Pentagonal Pyramid	R	S

A. P-20, Q-6, R-12, S-4

B. P-20, Q-12, R-6, S-6

C. P-20, Q-12, R-6, S-9

D. P-8, Q-12, R-6, S-12

**Answer: A**



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15. Match the following and select the correct option.

Column-I	Column-II
(P) 40 lakhs = _____ millions	(i) 865
(Q) The value of $V \times C \times M \times X$ is _____.	(ii) 5000000
(R) Product of 4444 and a number is three million eight hundred forty four thousand and sixty. The number is _____.	(iii) 200000
(S) Estimated product of 2038 and 123 is _____.	(iv) 4

A. (P)  $\rightarrow$  (iv), (Q)  $\rightarrow$  (ii), (R)  $\rightarrow$  (iii), (S)  $\rightarrow$  (i)

B. (P)  $\rightarrow$  (ii), (Q)  $\rightarrow$  (iv) (R)  $\rightarrow$  (i), (S)  $\rightarrow$  (iii)

C. (P)  $\rightarrow$  (ii), (Q)  $\rightarrow$  (iv) (R)  $\rightarrow$  (iii), (S)  $\rightarrow$  (i)

D. (P)  $\rightarrow$  (iv) (Q)  $\rightarrow$  (ii), (R)  $\rightarrow$  (i), (S)  $\rightarrow$  (iii)

**Answer: D**



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