BLOOM

BMO | *Bloom Maths Olympiad*

GRADE **4**

Bloom Maths Olympiad
Sample Paper 1

Maximum Time : 60 Minutes   **Maximum Marks : 35**

INSTRUCTIONS

1. There will be 35 Multiple Choice Questions in this paper, carrying 1 mark each.

2. Each question has Four Options out of which **ONLY ONE** is correct.

3. All questions are compulsory.

4. There is no negative marking.

5. No electronic devices capable of storing and displaying visual information such as calculator and mobile are allowed during the course of the exam.

School Name

Student's Name

1. Write the expanded notation for 500432.
   (a) $500000 + 400 + 30 + 2$
   (b) $500000 + 00000 + 0000 + 30 + 2$
   (c) $500000 + 000 + 400 + 30 + 2$
   (d) $500000 + 00 + 400 + 30 + 2$

2. What is the difference between place value and face value of 8 in 86749?
   (a) 79990
   (b) 79998
   (c) 79992
   (d) 78998

3. In the numeral 957A21442, name the period that A occupies.
   (a) Ones
   (b) Thousands
   (c) Lakhs
   (d) Crores

4. The numeral for eighty five thousands two hundred and sixty is ....
   (a) 8526
   (b) 85260
   (c) 85206
   (d) 80026

5. Identify the biggest number when rounded off to the nearest thousand gives 8000.
   (a) 7999
   (b) 8501
   (c) 7501
   (d) 8499

6. Write 630 as a roman numeral.
   (a) DCXX
   (b) DXXX
   (c) VCXXX
   (d) DCXXL

7. $A = 454658, B = 400085, C = 408789$. Which one of the following is the greatest?
   (a) $A + B$
   (b) $B + C$
   (c) $A + C$
   (d) All are equal

8. A shopkeeper purchased 480 apples. Later he found that 13 of them are spoiled completely. If he sold 237 of them at the rate ₹ 7 per apple. How much rupees they earn by selling remaining apples?
   (a) ₹ 1710
   (b) ₹ 1750
   (c) ₹ 1610
   (d) ₹ 1850

9. In a water tank, there is 3459525 L of water. If the tank can hold 3564565 L more water. What is the capacity of the tank?
   (a) 5024090 L
   (b) 6024090 L
   (c) 7024090 L
   (d) 9024090 L

10. There are 6665 students in a school. Each student contributed ₹ 53 for a society welfare programme. How much money did the students contributed together?
    (a) ₹ 353245
    (b) ₹ 406575
    (c) ₹ 426575
    (d) ₹ 456575

11. Arrange the given digits 8, 4, 0, 9 and 3 to form the greatest five digit odd number (without repetition) and then divide that number by 3. The result will be .....
    (a) 98403
    (b) 32801
    (c) 94803
    (d) 31601

02

12. A doll manufacturing company made 28985 dolls in the month of March. If equal number of dolls were made everyday, then how many dolls were made in one day?

(a) 539 (b) 935 (c) 993 (d) 339

13. Which of the following is the fourth multiple of 18?

(a) 36 (b) 72 (c) 18 (d) 90

14. Which of the following numbers has the least number of factors?

(a) 12 (b) 15 (c) 13 (d) 20

15. Anamika made a shape by folding the given cardboard along the dotted lines.
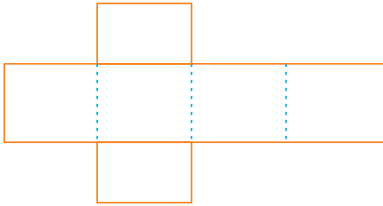
Which shape did Anamika make?

(a)   (b)   (c)   (d)
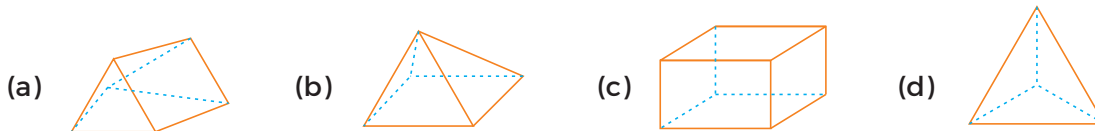
16. Convert the improper fraction $\dfrac{518}{27}$ into a mixed fraction.

(a) $5\dfrac{19}{27}$ (b) $27\dfrac{19}{5}$ (c) $19\dfrac{5}{27}$ (d) $27\dfrac{5}{19}$

17. Which two fractions are equivalent?

(a) $\dfrac{5}{2}$ and $\dfrac{2}{5}$ (b) $\dfrac{4}{3}$ and $\dfrac{8}{6}$ (c) $\dfrac{1}{4}$ and $\dfrac{2}{4}$ (d) $\dfrac{2}{3}$ and $\dfrac{1}{3}$

18. Find the missing fraction in the box.

$$1\dfrac{3}{4} + 2\dfrac{3}{8} = \boxed{?} + 2$$

(a) 2 (b) $4\dfrac{1}{8}$ (c) $2\dfrac{1}{8}$ (d) $2\dfrac{1}{4}$

19. A pole is painted blue and red. The red part is $1\dfrac{2}{5}$ times as long as the blue part. Find the length of the blue part, if the length of the pole is 5.52 m.

(a) 2.3 m (b) 2.5 m (c) 2 m (d) 3.2 m

20. Anshuman bought 56 kg 500 gm of rice from one shop and 48 kg 750 gm of rice from another. How much rice did he buy?

(a) 105 kg 150 gm (b) 105 kg 250 gm (c) 250 kg 105 gm (d) 1052500 gm

03

21. Which group of buckets can hold more than 1000 mL of water together?

(a) 750 ml + 250 ml

(b) 125 ml + 125 ml + 750 ml

(c) 650 ml + 350 ml

(d) 600 ml + 300 ml + 200 ml

22. Which one of the following is true for ₹ 25.63, if we add the amount ₹ 10.20?
- (a) ₹ 35 and 83 paise
- (b) ₹ 3583
- (c) ₹ 358 and 3 paise
- (d) None of these

23. What time will it be 30 min after 11 : 30 pm?
- (a) 12:00 pm
- (b) 12:00 am
- (c) 12 Midday
- (d) 11:00

24. The number of factors of 12 are
- (a) 4
- (b) 5
- (c) 6
- (d) 3

25. An angle which measures is less than 90° but more than 60°, will be
- (a) Acute angle
- (b) obtuse angle
- (c) Right angle
- (d) Straight angle

26. How many line segments are there in a quadrilateral?
- (a) 1
- (b) 2
- (c) 3
- (d) 4

27. A square has .... lines of symmetry.
- (a) one
- (b) two
- (c) three
- (d) four

28. What is the perimeter of the given figure?

12 cm   18 cm
9 cm
12 cm
9 cm
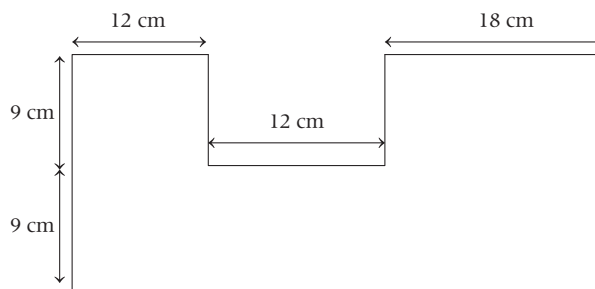
- (a) 160 cm
- (b) 120 cm
- (c) 138 cm
- (d) 130 cm

29. Find the area of the triangle whose base is 5 cm and height is 7 cm.
- (a) 17.5 cm^2
- (b) 15.5 cm^2
- (c) 12.5 cm^2
- (d) 18.5 cm^2

04

30. The given pictograph shows the number of different animals and birds in a zoo. Study the pictograph carefully and answer the following question.

Animals/ Birds	Number of animals/birds
	😄 😄 😄 😄
	😄 😄
	😄 😄 😄
	😄 😄

Each 😄 represents 5 animals/birds

Find the total number of legs of all the given animals and birds.

(a) 220　　　　(b) 200　　　　(c) 180　　　　(d) 250

31. Rinku, Rajan, Brijesh and Raghu are friends. The graph shows the number of toy cars each of them have. What can we conclude from the given graph?
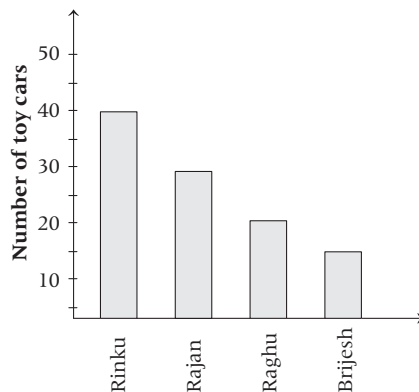
(a) Brijesh has one third the number of toy cars Rinku has

(b) Three children have more than 20 toy cars

(c) Rajan has twice as many toy cars as Brijesh

(d) Brijesh has 1 toy car less than Raghu

32. Which of the following options will continue the given number pattern?

9　　27　　81　　243　　?
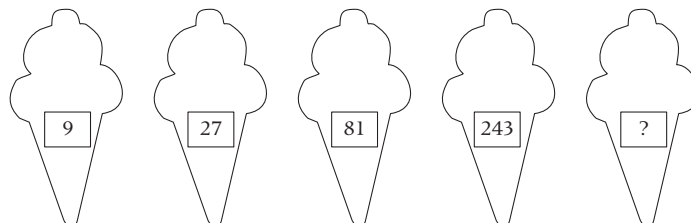
(a) 576　　　　　　　　(b) 486

(c) 840　　　　　　　　(d) 729

05

33. 60 children visit the zoo. They each vote for their favourite animal.

Favourite animal	Number of children
Cheetah	7
Lion	22
Tiger	13
Panther	8
Leopard	10

How many more children voted for tiger than panther?

(a) 2   (b) 3

(c) 4   (d) 5

34. The circle below gives the details of the number of library books in the school library.
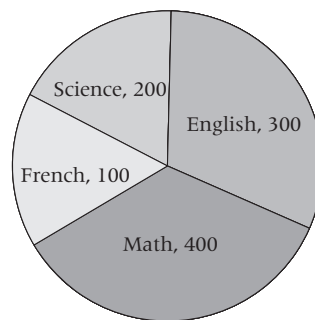
How many books are there in the library?

(a) 800   (b) 1100

(c) 1000   (d) 900

35. The value of $\dfrac{2}{5} \times \dfrac{3}{4} \div \dfrac{8}{5}$ is equal

(a) $\dfrac{3}{8}$ (b) $\dfrac{3}{7}$

(c) $\dfrac{3}{16}$ (d) $\dfrac{6}{20}$

06

Solutions

1. (a)

10 Lakh	Lakh	10 Th	Th	H	Ten	One
	5	0	0	4	3	2

Expanded notation for $500432 = 500000 + 400 + 30 + 2$

Hence, option (a) is correct.

2. (c) Place value of 8 in $86749 = 80000$

Face value of 8 in $86749 = 8$

$\therefore$ Required difference $= 80000 - 8 = 79992$

Hence, option (c) is correct.

3. (c)

10 Cr	Cr	10 Lakh	Lakh	10 Th	Th	H	T	O
9	5	7	A	2	1	4	4	2

So, A occupies "Lakhs" period.

Hence, option (c) is correct.

4. (b)

10Th	Th	H	T	O
8	5	2	6	0

Or the numeral for eighty five thousands two hundred and sixty $= 85260$

Hence, option (b) is correct.

5. (d) 8499 the biggest number in given numbers when rounded off to the nearest thousand gives 8000.

Hence, option (d) is correct.

6. (d) We know that, $D = 500$, $C = 100$, $X = 10$ and $L = 50$

We know that, a smaller roman numeral is placed before a bigger roman numeral, the smaller numeral number gets subtracted.

$\therefore$ $630 = 500 + 100 - 10 - 10 + 50 = DCXXL$

Hence, option (d) is correct.

7. (c) Given, $A = 454658, B = 400085, C = 408789$

$$\begin{array}{r} A = 454658 \\ B = 400085 \\ \hline A + B = 854743 \end{array} \qquad \begin{array}{r} B = 400085 \\ C = 408789 \\ \hline B + C = 808874 \end{array} \qquad \begin{array}{r} A = 454658 \\ C = 408789 \\ \hline A + C = 863447 \end{array}$$

It is clear that $A + C$ is the greatest.

Tricky Solution A is the greatest number in A, B and C; and C is the greater than B.

So, $A + C$ is the greatest.

07

Hence, option (c) is correct.

8. (c) Number of apples purchased by the shopkeeper $= 480$

Number of apples that are spoiled $= 13$

$\therefore$ Number of apples that are left $= 480 - 13$.

Number of apples sold by the shopkeeper $= 237$

$\therefore$ Number of apples left to be sold $= 480 - 13 - 237 = 230$

$\therefore$ The shopkeeper earn the amount by selling remaining apples $= 230 \times 7 = ₹ 1610$

Hence, option (c) is correct.

9. (c)

$$
\begin{aligned}
\text{Quantity of water in the tank} &= \quad 3459525 \text{ L} \\
\text{Quantity of water that tank can hold more} &= +\,3564565 \text{ L} \\
\hline
\text{Capacity of tank} &= \quad 7024090 \text{ L}
\end{aligned}
$$

Hence, option (c) is correct.

10. (a) Number of students in a school $= 6665$

Each student contributed money $= ₹ 53$

$\therefore$ Total contributed money $= 6665$

$$
\begin{array}{r}
6665 \\
\times\,53 \\
\hline
19995 \\
33325\,\times \\
\hline
₹\,353245 \\
\hline
\end{array}
$$

Hence, option (a) is correct.

11. (b) Given digits are 8, 4, 0, 9 and 3.

The greatest five digit odd number (without repetition)

formed by given digits $= 98403$

Now, divide by 3 to obtain the number

$$
\begin{array}{r}
3)\,98403\,(32801 \\
\underline{9} \\
8 \\
\underline{6} \\
24 \\
\underline{24} \\
003 \\
\underline{3} \\
\times
\end{array}
$$

$\therefore$ The result will be 32801.

Hence, option (b) is correct.

12. (b) Number of dolls made by company in the month of March $= 28985$

Number of days in the month of March $= 31$ Days

08

∴ Number of dolls that were made everyday $= 28985 \div 31 = 935$

$$31) \overline{28985} (935$$
$$\underline{279}$$
$$108$$
$$\underline{93}$$
$$155$$
$$\underline{155}$$
$$\times$$

Hence, option (b) is correct.

13. (b) $18 \times 1 = 18, 18 \times 2 = 36, 18 \times 3 = 54, 18 \times 4 = 72$

∴ The fourth multiple of $18 = 18 \times 4 = 72$

Hence, option (b) is correct.

14. (c) Factors of 12 are 1, 2, 3, 4, 6, 12 (6 factors)

Factors of 15 are 1, 3, 5, 15 (4 factors)

Factors of 13 are 1, 13 (2 factors)

Factors of 20 are 1, 2, 4, 5, 20 (5 factors)

∴ 13 has the least number of factors.

Alternate Method

As we know that, prime number has least factor.

Here, number 13 is a prime number, so it has least factor.

Hence, option (c) is correct.

15. (c) When we fold the given cardboard along the dotted lines, we get a shape of cube.

Hence, option (c) is correct.

16. (c) $\dfrac{518}{27} = 19\dfrac{5}{27}$

Hence, option (c) is correct.

Rough Work

$$27) \overline{518} (19$$
$$\underline{27}$$
$$248$$
$$\underline{243}$$
$$\underline{3}$$

17. (b) From option (a), $\dfrac{5}{2}$ and $\dfrac{2}{5} \Rightarrow \dfrac{5}{2} \times \dfrac{5}{5}$ and $\dfrac{2}{5} \times \dfrac{2}{2} \Rightarrow \dfrac{25}{10}$ and $\dfrac{4}{10}$ are not equivalent.

From option (b), $\dfrac{4}{3}$ and $\dfrac{8}{6} \Rightarrow \dfrac{4 \times 2}{3 \times 2}$ and $\dfrac{8}{6} \Rightarrow \dfrac{8}{6}$ and $\dfrac{8}{6}$ are equivalent.

From option (c), $\dfrac{1}{4}$ and $\dfrac{2}{4}$ are not equivalent.

From option (d), $\dfrac{2}{3}$ and $\dfrac{1}{3}$ are not equivalent.

Hence, option (b) is correct.

09

18. (c) $1\dfrac{3}{4}+2\dfrac{3}{8}=?+2 \implies \dfrac{7}{4}+\dfrac{19}{8}=?+2$

$\dfrac{7\times2+19}{8}-2=?$

$?=\dfrac{14+19-16}{8}=\dfrac{33-16}{8}=\dfrac{17}{8}=2\dfrac{1}{8}$

Hence, option (c) is correct.

19. (a) Red part $=1\dfrac{2}{5}\times$ Blue part $=\dfrac{7}{5}\times$ Blue part

$\because$ \qquad Red part $+$ Blue part $=5.52$ m

$\dfrac{7}{5}\times$ Blue part $+$ Blue part $=5.52$ m

$\implies \left(\dfrac{7}{5}+1\right)$ Blue part $=5.52$ m

$\implies \dfrac{7+5}{5}\times$ Blue part $=5.52$ m

$\implies$ Blue part $=\dfrac{5.52\times5}{12}$ m $=\dfrac{27.60}{12}$ m $=2.3$ m

Hence, option (a) is correct.

20. (b)

	kg	gm
Anshuman bought the rice from one shop $=$	56	500
Anshuman bought the rice from another shop $=$	48	750
Anshuman bought total rice $=$	105	250

$[\because 1$ kg $=1000$ gm$]$

Hence, option (b) is correct.

21. (d) From option (a), 750 mL $+250$ mL $=1000$ mL

From option (b), 125 mL $+125$ mL $+750$ mL $=1000$ mL
From option (c), 650 mL $+350$ mL $=1000$ mL
From option (d), 600 mL $+300$ mL $+200$ mL $=1100$ mL
$\therefore$ In option (d) the group of buckets can hold more than 1000 mL of water together.
Hence, option (d) is correct.

22. (a) Required sum of money $=$ ₹ $25.63+$ ₹ $10.20=$ ₹ 35.83
Hence, option (a) is correct.

23. (b) $11:30$ pm $+30$ min $=12:00$ am or 12 midnight
Hence, option (b) is correct.

24. (c) The factors of 12 are 1, 2, 3, 4, 6, 12.
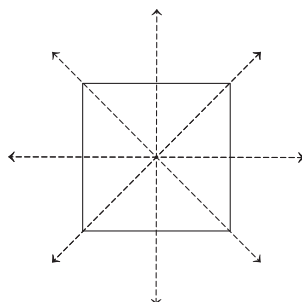Hence, number of factors of 12 are 6.
So, option (c) is correct.

10

25. (a) Acute angle [$\because 0° <$ Acute angle $< 90°$]

Hence, option (a) is correct.

26. (d) 'Four' line segments are there in a quadrilateral.
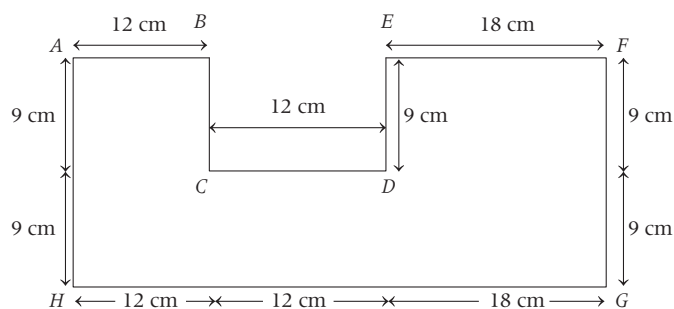
Hence, option (d) is correct.

27. (d)

So, a square has <u>four</u> lines of symmetry.

Hence, option (d) is correct.

28. (c) Mark point in given figure as *A, B, C, D,* ....

$\therefore$ Perimeter of given figure $= AB + BC + CD + DE + EF + FG + GH + HA$

$$= 12 + 9 + 12 + 9 + 18 + (9 + 9) + (18 + 12 + 12) + (9 + 9)$$

$$= 60 + 18 + 42 + 18 = 138 \text{ cm}$$

Hence, option (c) is correct.

29. (a) Area of triangle $= \dfrac{1}{2} \times \text{Base} \times \text{Height}$

$$= \dfrac{1}{2} \times 5 \times 7$$

$$= \dfrac{35}{2} = 17.5 \text{ cm}^2$$

Hence, option (a) is correct.

30. (b) We know that monkey, deer, horse have 4 legs and swan have 2 legs

Total number of monkey, deer, horse $= 9 \times 5 = 45$

and total number of swan $= 2 \times 5 = 10$

$\therefore$ Total number of legs of all the given animals and birds.

$$= 45 \times 4 + 10 \times 2 = 180 + 20 = 200$$

11

Hence, option (b) is correct.

31. (c) By option (a),

$\frac{1}{3} \times$ the number of toy cars of Rinku $= \frac{1}{3} \times 40 \neq$ The number of toy cars of Brijesh

So, option (a) is not correct.

By option (b),

Two children (Rinku, Rajan) have more than 20 toy cars. So, option (b) is not correct.

By option (c),

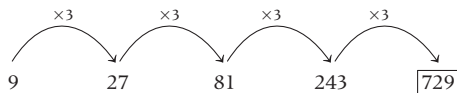$2 \times$ toys cars as Brijesh $= 2 \times 15 = 30 =$ The number of toy cars of Rajan

By option (d),

Brijesh toy cars $= 15$, Raghu's toy car $= 20$

$15 \neq 20 - 1$. So, option (d) is not correct.

Hence, option (c) is the correct.

32. (d) The given pattern, follows the multiplication of each digit by 3 to obtain the next digit

Hence, $? = 729$

Therefore, option (d) is correct.

33. (d) The number of children who voted for tiger $= 13$

The number of children who voted for panther $= 8$

$\therefore \qquad\qquad$ Required difference $= 13 - 8 = 5$

Hence, option (d) is correct.

34. (c) Total books in the library

$= $ English books $+$ Maths books $+$ French books $+$ Science books

$= 300 + 400 + 100 + 200 = 1000$

Hence, option (c) is correct.

35. (c) $\frac{2}{5} \times \frac{3}{4} \div \frac{8}{5} = \frac{2}{5} \times \frac{3}{4} \times \frac{5}{8} = \frac{2 \times 3 \times 5}{5 \times 4 \times 8} = \frac{30}{160} = \frac{3}{16}$

Hence, option (c) is correct.

12