CBSE Board
Class VI Mathematics
Term I
Sample Paper 3

Time: 2 ½ hours Total Marks: 80

General Instructions:

1. **All** questions are **compulsory**.
2. **Section A** comprises of **12** questions carrying 1 mark each.
3. **Section B** comprises of **12** questions carrying 2 marks each.
4. **Section C** comprises of **8** questions carrying 3 marks each.
5. **Section D** comprises of **5** questions carrying 4 marks each.

Section A
(Questions 1 to 12 carry 1 mark each)

1. How many thousands make a crore?
   A. 10
   B. 100
   C. 1000
   D. 10000

2. How many whole numbers are there up to 1000?
   A. 1001
   B. 1000
   C. 100
   D. 999

3. (−42) + (−35) =
   A. −7
   B. 7
   C. −77
   D. 41

4. Which is the fifth multiple of 18?
   A. 80
   B. 90
   C. 72
   D. 180

5. The improper fraction for $3\frac{1}{3}$ is_____

A. $\frac{10}{3}$

B. $\frac{3}{10}$

C. $\frac{1}{3}$

D. $\frac{3}{1}$

6. The English alphabet Z represents a/an _____ curve.

A. closed

B. open

C. polygon

D. triangle

7. (−2) − (−5) =

A. 7

B. (−7)

C. 3

D. (−3)

8. Arrange 3, (−3), 2, 0 and (−4) in the ascending order.

A. 0, 2, (−3), 3, (−4)

B. (−3), 3, 0, 2, (−4)

C. (−4), (−3), 0, 2, 3

D. (−3), 0, 2, 3, (−4)

9. $5\frac{1}{5}+4\frac{2}{5}=$

A. $9\frac{2}{5}$

B. $10\frac{3}{5}$

C. $2\frac{2}{5}$

D. $9\frac{3}{5}$

10. _____ passes through any two given points.
    A. Two line
    B. One and only one line
    C. No line
    D. Innumerable lines

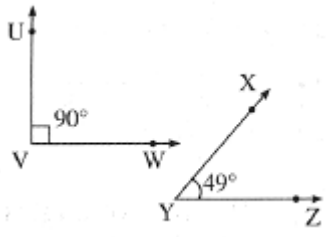
11. A right angle measures
    A. 60°
    B. 120°
    C. 180°
    D. 90°

12. The smallest whole number is
    A. 1
    B. 0
    C. 4
    D. 2

Section B
(Questions 13 to 24 carry 2 marks each)

13. Fill in the blanks with appropriate symbols '>" or '<".
    A. –9 ___ –15
    B. –10 ___ 10
    C. 0 ___ 3
    D. –28 ____ 17

14. Name the bigger angle in the pair.



15. Which number is neither prime nor composite?

16. Classify the numbers given below into numbers to the left of zero and to the right of zero on the number line.

    –9, +5, –28, –100, +81, –4, –1, +1, +72, –48, +65, –95

17. How many exterior angles does a triangle have in all?

18. Which is greater, 78712354 or 78721124?

19. Shilpi bought $\frac{2}{5}$ kg of sugar and $\frac{1}{3}$ kg of rice. What was the total weight of ingredients bought by Shilpi?

20. Write the opposite of each of the following:

    (a) Going 6 m to the East

    (b) A deposit of Rs. 100

    (c) 10 km above sea level

    (d) Earning Rs. 500

21. Which two solid shapes have the same number of faces, vertices and edges?

22. Use the divisibility test to determine whether the number 1258 is divisible by 6.

23. Last year, Minu grew by $\frac{3}{5}^{\text{th}}$ of an inch and her brother grew by $\frac{2}{5}^{\text{th}}$ of an inch. How much more did Minu grow than her brother?

24. Classify the following angles as acute, obtuse, right or reflex angles.

    (a) 35°

    (b) 185°

    (c) 90°

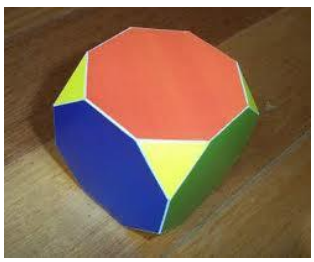
    (d) 92°

Section C

(Questions 25 to 32 carry 3 marks each)

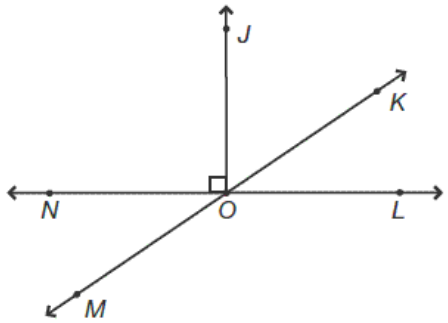
25. Compare the fractions $\frac{7}{12}$ and $\frac{9}{16}$.

26. Each corner of a cube is cut off, leaving a triangular face at each corner and an octagonal face in place of each face of the original cube. How many vertices and faces will the new polyhedron have?



27. Three boys step off together from the same spot. Their steps measure 63 cm, 70 cm and 77 cm respectively. What is the minimum distance each should cover so that all can cover the distance in complete steps?

28. From the following figure, indentify the angles:



(a) Name three acute angles.

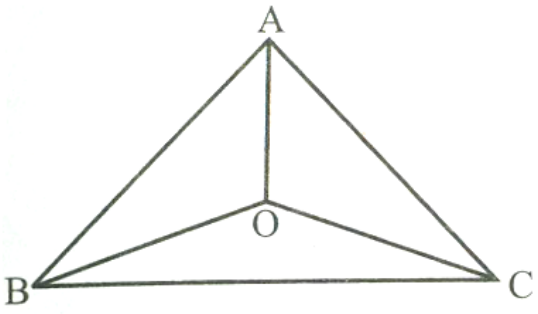
(b) Name three obtuse angles.

(c) Name two straight angles.

29. From 300 feet below sea level, Rocky took off in his helicopter and ascended 900 feet. Which integer represents Rocky's elevation now?

30. Use the divisibility tests to determine whether the number 378 is divisible by 2, 3, 4, 5, 6, 9 or 11.

31. Look at the figure and answer the following questions:



(i) Name all the triangles in the figure.

(ii) Name all the triangles having the vertex O.

(iii) Name all the triangles having the vertex A.

32. Give a rough estimate (by rounding off to nearest hundreds) and also a closer estimate (by rounding off to nearest tens): 4, 89, 348 – 48, 365

Section D

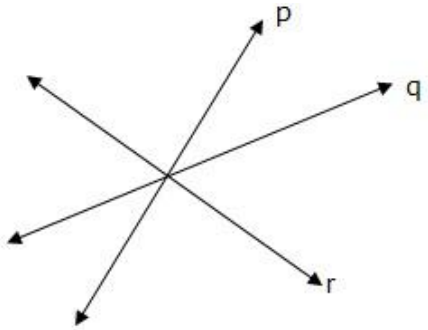
(Questions 33 to 37 carry 4 marks each)

33. Answer the following questions for the given figure:

    (a) What are lines p, q and r called?

    (b) What is the point at which they meet called? Label it on the figure.

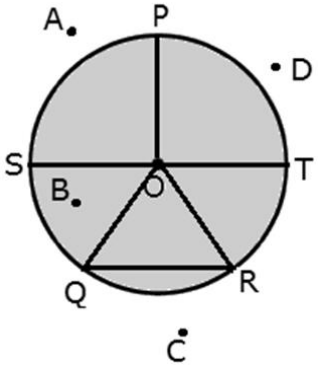
    (c) How many lines can pass through the labeled point?



34. Find the HCF of 2261, 3059 and 3325.

35. Richa completed a fifth of her homework in the morning and two-sevenths of it in the afternoon. What fraction of her homework did she complete? Also, find what fraction of her homework is incomplete?

36. Look at the given figure and answer the following:



    (i) Name the points which are in the exterior and the interior of the circle.

    (ii) Name the radii of the circle.

    (iii) Name the diameter of the circle.

    (iv) Name the chords of the circle.

37. Arrange the fractions $\frac{2}{3}$, $\frac{1}{6}$, $\frac{5}{9}$ and $\frac{7}{12}$ in the ascending order.

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Section A

1. Correct answer: D

   One crore can be written as 1,00,00,000.

   One thousand can be written as 1000.

   So, 10000 times one thousand would make one crore.

2. Correct answer: A

   There are 1000 + 1 = 1001 whole numbers upto 1000.

   i.e. 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, ..., 1000

3. Correct answer: C

   (–42) + (–35) = –42 – 35 = –77

4. Correct answer: B

   Fifth multiple of 18 = 18 × 5 = 90

5. Correct answer: A

   $3\frac{1}{3} = 3 + \frac{1}{3} = \frac{10}{3}$

6. Correct answer: B

   The English alphabet Z represents an open curve.

7. Correct Answer: C

   (–2) – (–5)

   Subtracting a negative integer means adding its positive integer.

   ∴ (–2) – (–5) = (–2) + 5 = 3

8. Correct Answer: C

The numbers 3, (–3), 2, 0 and (–4) can be arranged in the ascending order as (–4), (–3), 0, 2, 3

The numbers lying to the left of the number are smaller than those lying to its right.

Also zero is smaller than every positive number and greater than every negative number.

9. Correct Answer: D

$$5\frac{1}{5}+4\frac{2}{5}$$

$$=\frac{26}{5}+\frac{22}{5}$$

$$=\frac{26+22}{5}$$

$$=\frac{48}{5}$$

$$=9\frac{3}{5}$$

10. Correct Answer: B

One and only one line passes through any two given points.

11. Correct Answer: D

A right angle measures 90°.

12. Correct Answer: B

The smallest whole number is 0.

Section B

13. (i) $-9 > -15$

(ii) $-10 < 10$

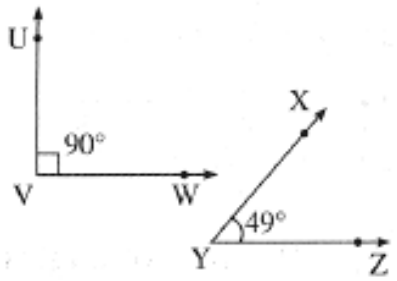
(iii) $0 < 3$

(iv) $-28 < 17$

14. Measure of ∠UVW = 90°, measure of ∠XYZ = 49°.

Measure of ∠UVW > measure of ∠XYZ

∴ ∠UVW is the bigger of the two angles.



15. The number 1 is neither a prime number nor a composite number.

16. Numbers to the left of zero are:

–9, –28, –100, –4, –1, –48, –95.

Numbers to the right of zero are:

+5, +81, +1, +72, +65.

17. A triangle has 6 exterior angles in all.

18. Arrange the numbers 78712354 and 78721124 in place-value chart:

Cr	L	L	TTh	Th	H	T	O
7	8	7	1	2	3	5	4
7	8	7	2	1	1	2	4

Clearly both numbers have 8 digits.

At crores place both have the same digit, i.e. 7.

At ten lakhs place both have the same digit, i.e. 8.

At lakhs place both have the same digit, i.e. 7.

But at ten thousands place, first number has 1 and second number has 2.

Clearly, 2 > 1.

Hence 78721124 > 78712354

19.

$$\text{Total ingredients purchased} = \frac{2}{5}\text{kg sugar} + \frac{1}{3}\text{kg rice}$$

$$= \frac{2}{5} + \frac{1}{3}$$

L.C.M. of the denominators 5 and 3 is 15

$$\Rightarrow \text{Total ingredients purchased} = \frac{(2\times 3)}{(5\times 3)} + \frac{(1\times 5)}{(3\times 5)}$$

$$= \frac{6}{15} + \frac{5}{15}$$

$$= \frac{6+5}{15}$$

$$= \frac{11}{15}$$

20.

(a) Going 6 m to the West

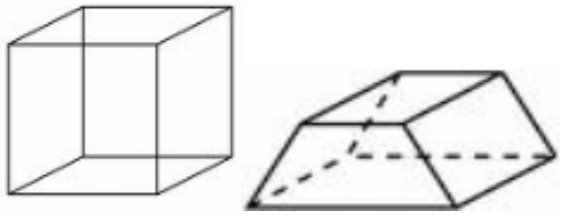
(b) A withdrawal of Rs. 100

(c) 10 km below sea level

(d) Spending Rs. 500

21. A cube and a trapezium prism have the same number of faces, vertices and edges.

Both have 6 faces, 8 vertices, and 12 edges.



22. Given number is 1258. Its unit digit is 8, which is divisible by 2. So, 1258 is divisible by 2.

Sum of its digits = 1 + 2 + 5 + 8 = 16, which is not divisible by 3. So, 1258 is not divisible by 3.Because 1258 is divisible by 2 but not by 3, it is not divisible by 6.

23. Minu's growth = $\frac{3}{5}^{th}$ of an inch

Her brother's growth = $\frac{2}{5}^{th}$ of an inch

Difference in the growth of Minu and her brother $= \frac{3}{5} - \frac{2}{5} = \frac{3-2}{5} = \frac{1}{5}$

So, Minu grew $\frac{1}{5}^{th}$ of an inch more than her brother.

24.

(a) 35° - Acute angle because the measure is less than 90°.

(b) 185° - Reflex angle because the measure is greater than 180° and less than 360°.

(c) 90° - An angle with measure of 90° is a right angle.

(d) 92° - An obtuse angle because the measure is greater than 90° and less than 180°.

Section C

25. LCM of 12 and 16 = (4 × 3 × 4) = 48

So, we convert each one of $\frac{7}{12}$ and $\frac{9}{16}$ into an equivalent fraction having 48 as denominator.

$\frac{7}{12} = \frac{7\times4}{12\times4} = \frac{28}{48}$ and $\frac{9}{16} = \frac{9\times3}{16\times3} = \frac{27}{48}$

Clearly, $\frac{28}{48} > \frac{27}{48}$

Hence, $\frac{7}{12} > \frac{9}{16}$

26. Each of the 8 vertices of the cube has now been replaced by three vertices of a triangle.

So, there are now 24 vertices. The cube had 6 square faces.

Now, those faces are still there but have become octagons.

Additionally, there are now 8 new triangular faces.

So, there is a total of 14 faces.

27. Step Distribution of 1st Boy = 63 cm

Step Distribution of 2nd Boy = 70 cm

Step Distribution of 3rd Boy = 77 cm

LCM of 63, 70, 77 can be calculated as follows:

2	63, 70, 77
3	63, 35, 77
3	21, 35, 77
5	7, 35, 77
7	7, 7, 77
11	1, 1, 11
	1, 1, 1

LCM = 2 × 3 × 3 × 5 × 7 × 11 = 6930

Hence the minimum distance each should cover so that all can cover the distance in complete steps is 6930 cm.

28. The angles are as shown below:

(a) Acute angles: ∠KOL; ∠JOK; ∠NOM

(b) Obtuse angles: ∠NOK; ∠MOJ; ∠MOL

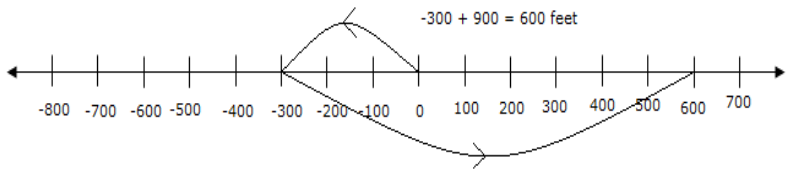
(c) Straight angles: ∠NOL; ∠MOK

29. Old position = –300 feet below sea level

Ascend in position = 900 feet

Change in position is given by –300 + 900.

To find this, start with –300 and move 9 steps to the right as the gap between steps is 100.



After moving, we reach at 600 i.e. –300 + 900 = 600 feet

Thus, Rocky is 600 feet above sea level.

30. The digit in the unit place of 378 is 8.

According to the test for divisibility by 2, 278 is divisible by 2.

The sum of the digits of 378 = 3 + 7 + 8 = 18 and 18 is divisible by 3 and 9.

Hence, according to the test for divisibility by 3 and 9, 378 is divisible by 3 and 9.

378 is divisible by 3 and 9.

378 is divisible by 2 and 3. Hence, 378 is divisible by 6.

31. (i) ΔABC, ΔABO, ΔACO, ΔBOC

(ii) ΔOAC, ΔOAB, ΔOBC

(iii) ΔAOB, ΔAOC, ΔABC

32. 4,89,348 – 48,365

Rounding off to hundred, 489348 and 48365 may be rounded off to 489300 and 48400 respectively.

$$\begin{array}{r} 489300 \\ -\ 48400 \\ \hline 440900 \end{array}$$

Rounding off to tens, 489348 and 48365 may be rounded off to 489350 and 48370 respectively.

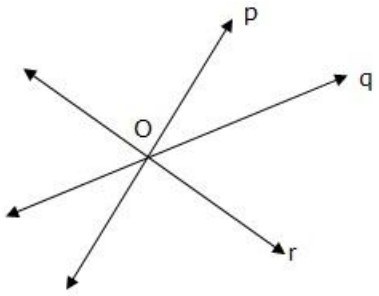
$$\begin{array}{r} 489350 \\ -\ 48370 \\ \hline 440980 \end{array}$$

Section D

33. (a) Lines p, q and r are intersecting lines.

(b) Point at which the lines meet is called the point of intersection. The point O represents the point of intersection.

(c) Infinite number of lines can pass through the point O (point of intersection).



34. We have three numbers 2261, 3059 and 3325

$2261\overline{)3059}(1$ -2261 $798)2261(2$ -1596 $665)798(1$ -665 $133)665(5$ -665 0	$133\overline{)3325}(25$ -266 665 -665 0

HCF of 2261 and 3059 = 133

Hence, HCF of 2261, 3059 and 3325 is 133.

35. Homework completed in the morning = $\frac{1}{5}$

Homework completed in the afternoon = $\frac{2}{7}$

Homework completed during the day = $\frac{1}{5}+\frac{2}{7}$

L.C.M. of 5 and $7 = 35$

$\Rightarrow$ Homework completed during the day = $\frac{7}{35}+\frac{10}{35}=\frac{17}{35}$

Richa completed $\frac{17}{35}^{th}$ of the total homework.

Fraction of homework incomplete = $1-\frac{17}{35}=\frac{35-17}{35}=\frac{18}{35}$

Therefore, $\frac{18}{35}^{\text{th}}$ of the total homework is incomplete.

36.

(i) The points which are in the exterior of the circle are Points A, C and D. The points which are in the interior of the circle are Points B and O.

(ii) The radii of the circle are Line segments OP, OS, OT, OQ and OR.

(iii) The diameter of the circle is Line segment ST.

(iv) The chords of the circle are Line segments ST and QR.

37. For the fractions $\frac{2}{3}, \frac{1}{6}, \frac{5}{9}$ and $\frac{7}{12}$ we find the L.C.M of its denominator.

L.C.M. of 3, 6, 9, 12 = (3 × 2 × 3 × 2) = 36

So, we convert each of given fractions into an equivalent fraction having 36 as the denominator.

Now,

$$\frac{2}{3}=\frac{2\times12}{3\times12}=\frac{24}{36}$$

$$\frac{1}{6}=\frac{1\times6}{6\times6}=\frac{6}{36}$$

$$\frac{5}{9}=\frac{5\times4}{9\times4}=\frac{20}{36}$$

$$\frac{7}{12}=\frac{7\times3}{12\times3}=\frac{21}{36}$$

Clearly,

$$\frac{6}{36}<\frac{20}{36}<\frac{21}{36}<\frac{24}{36}$$

Hence, $\frac{1}{6}<\frac{5}{9}<\frac{7}{12}<\frac{2}{3}$.

The given fractions in the ascending order are $\frac{1}{6}, \frac{5}{9}, \frac{7}{12}, \frac{2}{3}$.