



UNICUS OLYMPIADS

Sample Paper

Class 8

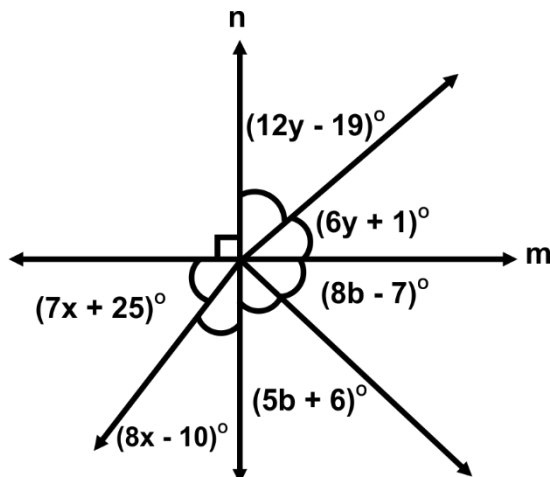
Unicus Mathematics Olympiad (UMO)



Section	Total Questions	Marks per Questions	Total Marks
Classic Section	40	1	40
Scholar Section	10	2	20
Grand Total	50		60

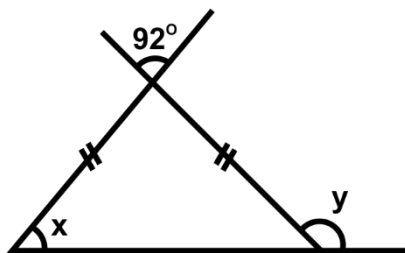
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6. Look at the image given below. The lines m and n are perpendicular bisector of each other. Find the values of $\angle(12y - 19)$ and $\angle(6y + 1)$, respectively:



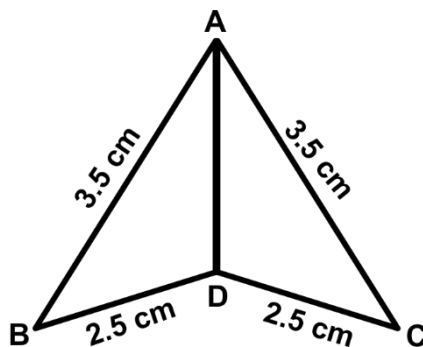
- | | |
|-------------------------|-------------------------|
| a. $53^\circ, 37^\circ$ | b. $37^\circ, 53^\circ$ |
| c. $64^\circ, 17^\circ$ | d. $17^\circ, 64^\circ$ |

7. Find the value of angles x and y respectively from the figure given below:



- | | |
|--------------------------|--------------------------|
| a. $44^\circ, 136^\circ$ | b. $24^\circ, 146^\circ$ |
| c. $27^\circ, 141^\circ$ | d. $32^\circ, 147^\circ$ |

8. Fill in the blank:
Triangles ABD and ACD are congruent because of _____ congruence property.



- | | |
|--------|--------|
| a. SAS | b. SSS |
| c. ASA | d. RHS |

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9. Simplify the following:

$$5^0 + 5^1 + 25^4 \div 5^3$$

- a. 625
c. 3125
- b. 631
d. 3131
-

10. Simplify the following:

$$(3 \times 7^2 \times 11^5) / (21 \times 11^2)$$

- a. 11^3
c. $7^2 \times 11^3$
- b. 7×11^3
d. $7^2 \times 11^{10}$
-

11. The value of $[-243 + 121 - (-122) + 4(124 \div 12)]$ is equal to:

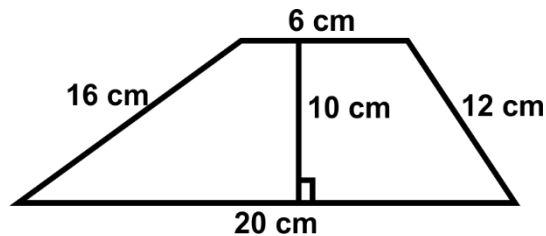
- a. 80.67
c. -202.67
- b. 41.33
d. -41.33
-

12. In the following expression, find the value of x:

$$(x - 3)/4 + (x - 7)/5 - (x - 2)/7 = 7/10$$

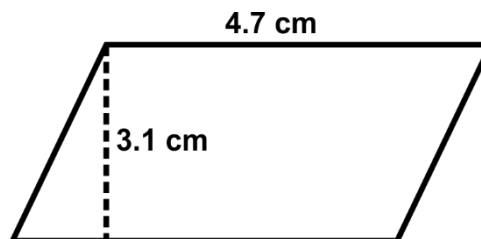
- a. $8\frac{15}{43}$
c. $7\frac{22}{43}$
- b. $7\frac{16}{43}$
d. $6\frac{39}{43}$
-

13. Find the area of the trapezium:



- a. 130 cm^2
c. 208 cm^2
- b. 140 cm^2
d. 156 cm^2
-

14. Find the area of the given parallelogram:



- a. 14.57 cm^2
c. 29.14 cm^2
- b. 7.285 cm^2
d. 24.47 cm^2
-

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15. Arya bowled 7 games in a tournament. The list shows his scores in the 7 games:
149, 160, 180, 155, 160, 137, 158
What is the mode of his scores?

a. 155
c. 160

b. 158
d. 156.5

16. Four sheets of 50 cm X 5 cm are to be arranged in such a manner that a square could be formed. What will be the area of inner part of the square so formed?

a. 2000 cm²
c. 1800 cm²

b. 2025 cm²
d. 2500 cm²

17. In statistics, a suitable graph for representing the partitioning of total into sub parts is:

a. A bar graph
c. A pie chart

b. A pictograph
d. A line graph

18. What % of 40 is 16?

a. 100%
c. 40%

b. 60%
d. 50%

19. Plantation G has q durian trees of grade r, s durian trees of grade t and u durian trees of grade v. The total number of durian trees in plantation G is:

a. $p + q + r + s + t + u + v$
c. $q + s + u$

b. $p + r + u + v$
d. $r + t + v$

20. A lends \$2,500 to B and a certain sum to C to the same time at 7% p.a. simple interest. If after 4 years, A altogether receives \$1,120 as interest from B and C, then the sum lent to C is:

a. \$700
c. \$4,000

b. \$1,500
d. \$6,500

21. A cistern can be filled up by one pipe in 12 hours and by another in 8 hours. Both the pipes are kept open for $2\frac{1}{2}$ hours. The part of the cistern filled up is:

a. $\frac{25}{48}$
c. $\frac{25}{36}$

b. $\frac{5}{6}$
d. $\frac{12}{25}$

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25. The diameter of a bullock cart wheel is $\frac{14}{11}$ m. This wheel makes 10 complete revolutions per minute. What would be the speed of the cart in km per hour?
- a. 4.8
b. 9.6
c. 8.8
d. 2.4
-

26. Each edge of a cube is increased by 50%. The percentage increase in the surface area of the cube is:
- a. 50
b. 125
c. 150
d. 225
-

27. A box contains 50 coloured stones. What is the total number of orange stones in the box if the probability of selecting an orange stone is 0.4?
- a. 20
b. 15
c. 10
d. 40
-

28. From the following frequency table, find out how many students failed if the pass marks are 40:

Mark	0-19	20-39	40-49	50-59	60-89	90-100
Number of students	8	6	15	13	18	7

- a. 29
b. 7
c. 8
d. 14
-
29. A man has a hundred dollars. He bought vegetables for \$26.75 and fruits for \$25.45. How much money he has left?
- a. \$47.80
b. \$52.40
c. \$73.25
d. \$37.80
-

30. A bag contains 25 cents, 10 cents, and 5 cent coins in the ratio 1 : 2 : 3. If the total value of these is \$36, then what is the number of 25 cent coins?
- a. 40
b. 45
c. 50
d. 60
-

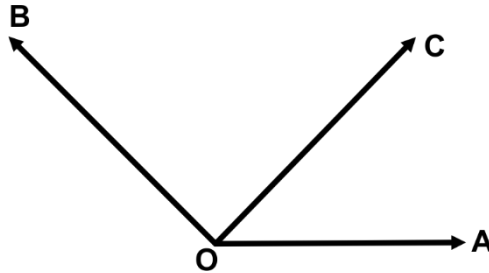
31. The ratio of land to water for the whole earth is 1 : 2 and 2 : 3 in the northern hemisphere. What is the ratio of land to water in the southern hemisphere?
- a. 4: 11
b. 1: 3
c. 1: 4
d. 4: 7
-

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- a. \$1,000
c. \$2,500

- b. \$1,500
d. \$2,375

43. In the given figure, if $\angle BOC = 7x + 20^\circ$ and $\angle COA = 3x^\circ$, then the value of x for which AOB becomes a straight line is:



- a. 16°
c. 20°

- b. 14°
d. 21°

44. A number is divided by three and multiplied by the square of a second number. The product is then divided into three. Write the algebraic term for the given statements using p as the first number and q as the second number:

- a. $9pq^2$
c. $pq^2/9$

- b. $pq^2/3$
d. $3pq^2$

45. Match Column A with Column B:

Column A		Column B	
a.	$x : 5 :: 2 : 3$	(p)	$6/5$
b.	$2 : x :: 4 : 3$	(q)	$15/2$
c.	$2 : 5 :: x : 3$	(r)	$10/3$
d.	$2 : 5 :: 3 : x$	(s)	$3/2$

- a. (a) - (p), (b)- (q), (c) - (r), (d) - (s)
c. (a) - (q), (b)- (s), (c) - (p), (d) - (r)

- b. (a) - (r), (b)- (p), (c) - (s), (d) - (q)
d. (a) - (r), (b)- (s), (c) - (p), (d) - (q)

46. Which of the following is true?

- A. Triangle is a polygon.
B. An isosceles triangle can be obtuse.
C. All scalene triangles are acute.

- a. Only A
c. Only A and B

- b. Only B and C
d. A, B and C

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47. Following are steps while constructing a line segment of length 5 cm using a ruler. Which of the following steps is/are INCORRECT?

Step 1. First mark a point A on paper.

Step 2. Place a ruler in such a way that its zero point coincides with point A.

Step 3. Draw a line from point A of the measures of 4.5 cm on the ruler.

Step 4. Now, name the endpoints as Q.

Step 5. AB is the required line segment.

a. Step 1

b. Step 3

c. Both Steps 3 and 4

d. Both Steps 4 and 5

48. Rubi decided to donate 16% of her monthly salary to an NGO. On the day of donation, she changed her mind and donated \$6567 which was 75% of what she had decided earlier. How much is Rubi's monthly salary?

a. \$50,000

b. \$54,000

c. \$54,725

d. \$60,000

49. The population of a town increases at a certain rate per cent per annum. The present population of the town is 3600 and in 5 years' time, it will become 4800. How much will it be in 10 years' time?

a. 5000

b. 6000

c. 6400

d. 7000

50. The simple interest on a certain sum for 8 months at 4% per annum is \$129 less than the simple interest on the same sum for 15 months at 5% per annum. The sum is:

a. \$2,530

b. \$2,400

c. \$2,529

d. \$3,600

Answer Key

1.	a	2.	c	3.	c	4.	d	5.	c	6.	a	7.	a
8.	b	9.	d	10.	b	11.	b	12.	a	13.	a	14.	a
15.	c	16.	b	17.	c	18.	c	19.	c	20.	b	21.	a
22.	c	23.	c	24.	d	25.	d	26.	b	27.	a	28.	d
29.	a	30.	d	31.	a	32.	d	33.	c	34.	d	35.	c
36.	b	37.	d	38.	c	39.	d	40.	a	41.	b	42.	d
43.	a	44.	c	45.	d	46.	c	47.	c	48.	c	49.	c
50.	d												