PRACTICE SET 1

A Whole Content Based Test for Class 9th Mathematics Asiad

1. Which one of the following is divisible by $(1 + a + a^5)$ and $(1 + a^4 + a^5)$ individually?

   A $(a^2 + a + 1)(a^3 - a^2 + 1)(a^3 - a + 1)$

   B $(a^4 + a + 1)(-a^3 - a^2 + 1)(a^3 + a + 1)$

   C $(a^2 + a + 1)(a^3 + a^2 + 1)(a^3 + a + 1)$

   D $(a^4 - a + 1)(a^3 + a^2 + 1)(a^3 + a - 1)$

2. The line passing through the points $(-2, 8)$ and $(5, 7)$

   A cuts Y-axis only

   B cuts both the axes

   C does not cut any axis

   D cuts X-axis only

3. In a $\triangle ABC$, if AB is the longest side, then for any point P in the interior of the triangle, which of the following is correct?

   A $PA + PB < PC$

   B $PA + PB = PC$

   C $PA + PB > PC$

   D Can't say

4. If parallel sides of a trapezium are A and B, respectively. Then, the line joining the mid points of its non-parallel sides will be

   A $\sqrt{ab}$ B $\dfrac{2ab}{a+b}$

   C $\dfrac{a+b}{2}$ D $\dfrac{1}{2}(a-b)$

5. In the following figure, the value of x is
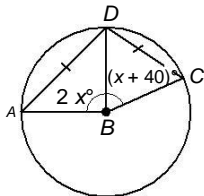
   A $60°$

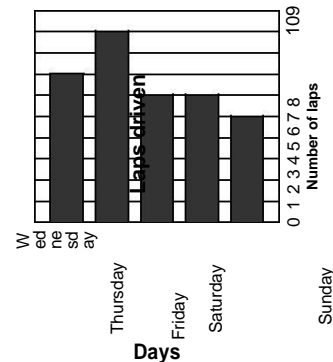   B $40°$

   C $20°$

   D None of the above

6. Area of an isosceles triangle is given by

$$A = \frac{1}{4} b \sqrt{4a^2 - b^2}$$

Here, a refers to the

   A equal side

   B unequal side

   C any side

   D None of the above

7. A race car driver kept track of the number of laps he drove in the past 5 days. If median of the numbers is x, then the day corresponding to $x + 3$ is

   A Sunday   B Friday

   C Saturday   D Thursday

8. 70 tickets of a lucky draw were sold. If the probability of Krish winning the draw is $\dfrac{1}{14}$, then the number of tickets bought by Krish is

   A 5   B 10

   C 15   D 20

9. The value of

$$\left(x^{1/a}\right)^{\frac{a^2 b^2}{b-a}} \cdot \left(x^{1/b}\right)^{\frac{b^2 c^2}{c-b}} \cdot \left(x^{1/c}\right)^{\frac{a^2 c^2}{a-c}} \text{ is}$$

   A 0   B 1

   C $x^{1/a + 1/b + 1/c}$ D $x^{ab + bc + ca}$

10. Write the equivalent polynomial. A cosmetic company needs a storage box that has twice the volume of its largest box. Let its largest box measures 4 inch by 5 inch by 3 inch. If the larger box needs to be made larger by adding the same amount to each dimension. Then, the new expression will be

A $x^3 + 12x^2 + 47x - 60 = 0$

B $x^4 + 12x^3 + 47x^2 - 60x + 120 = 0$
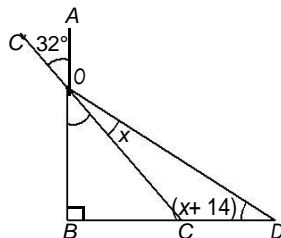
C $x^3 + 12x^2 + 47x + 60 = 0$

D None of the above

11.
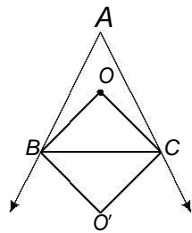
In the above figure, OB and $O\phi B$ are internal and external bisectors respectively, then which of the following is true?

A Ð BOC = Ð $BO\phi C$ + ÐA

B Ð BOC = Ð $BO\phi C$

C Ð $BO\phi C$ = Ð BOC + ÐA

D Can't say

12.

In the above figure, if $AB \wedge BC$, then x is equal to

A 18°   B 22°   C 25°   D 32°

13. **Assertion** (A) If $ABCD$ is a rhombus in which Ð $C = 60°$, then $AC : BD = \sqrt{3} :1$.

Reason (R) All sides of rhombus are equal and diagonals of rhombus are perpendicular to each other.

Which of the following is true?

A (A) is true and (R) is the correct explanation of (A)

B (A) is true and (R) is not the correct explanation of (A)

C (A) is true and (R) is false

D Both (A) and (R) are false

14. If AB is a line segment, C is a point such that Ð $ACB = 90°$ and D is a point such that Ð $ADB = 90°$. Then, which of the following can be true?

A $ABCD$ is a rhombus.

B $ABCD$ is a parallelogram.

C $ABCD$ is a cyclic quadrilateral.

D Can't say

15. The minute hand of a clock is $\dfrac{x}{2}$ cm long. Then, the area of the face of the clock described by the minute hand in 35 min, is

A $\dfrac{11x^2}{24}$

B $\dfrac{7x^2}{24}$

C $\dfrac{5x^2}{24}$

D $\dfrac{13x^2}{24}$

16. Match the following :

	LIST I		LIST II
A.	A shopkeeper recently sold 15 doughnuts of which 3 were chocolate frosted. What is the probability that the next doughnut will be a chocolate frosted doughnut?	i.	4/5
B.	Kurt is tossing bean bags at a target. He hits the target 7 out of his 14 tries. What is the probability that Kurt's next toss will be a hit?	ii.	1/5
C.	An ice-cream shop, 3 of the last 15 cones sold had vanilla ice-cream. What is the probability that the next sold will not be a vanilla?	iii.	1/2

CODES

	A	B	C
A	(i)	(ii)	(iii)
B	(iii)	(i)	(ii)
C	(iii)	(ii)	(i)
D	(ii)	(iii)	(i)

17. $\dfrac{7\sqrt{2}}{(3+\sqrt{2})} - \dfrac{2\sqrt{5}}{(\sqrt{6}+\sqrt{5})} - \dfrac{3\sqrt{2}}{(\sqrt{15}+3\sqrt{2})}$ is equal to

A 0

B 1

C 2

D None of the above

18. The given values of x and y are thought to satisfy a linear equation $y = 4x - 2$. When we draw the graph using the values of x and y as given in the table.

x	1	2
Y	2	6

At what point the graph of the linear equation intersects the X-axis?

A (1, 0)

B (2, 0)

C $\left(\dfrac{1}{2}, 0\right)$

D $\left(\dfrac{1}{4}, 0\right)$

19. In a $\triangle ABC$, if $AB = AC$ and the bisectors of angles B and C intersect at point O. Then, which of the following is true?

A $BO = OC$

B AO is bisector of $\angle BAC$

C $OA = OB = OC$

D Both (a) and (b)

20. In the following figure, if $AD = 12$ cm, $AB = 5$ cm and $BC = CD = 13$ cm. Then, the area of quadrilateral $ABCD$ is
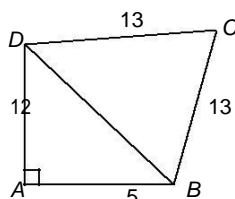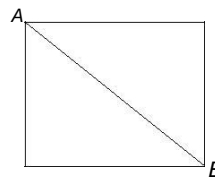

A $\dfrac{1}{4}(120 + 169\sqrt{3})$ cm^2

B $\left(120 + \dfrac{169\sqrt{3}}{4}\right)$ cm^2

C $(60 + 169\sqrt{3})$ cm^2

D None of the above

21. In the following figure, if MK bisects $\angle JKL$ then which of the following is incorrect?
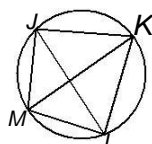
A $JM = ML$

B $\angle JKM = \angle LKM$

C $\triangle JML$ is an isosceles

D None of the above

22. Edward walked around two edges of a square field from A to B. Misha walked diagonally from A to B.


Approximately, what percentage of the distance Edward walked was the distance Misha walked?

A 50%   B 71%

C 100%   D 141%

23. The aggregate monthly expenditure of a family was ` 6240 during the first 3 months, ` 6780 during the next 4 months and ` 7236 during the last 5 months of a year. If the total savings during the year is ` 7080, then the average monthly income of the family is

A ` 7425

B ` 7500

C ` 8425

D ` 8500

24. $\sqrt[5]{\sqrt[4]{(2^4)^3}} \div 5 \sqrt[5]{8} + 2 \sqrt[5]{\sqrt[4]{(2^3)^4}}$ is equal to

A $2(\sqrt[5]{8})$ B $-2(\sqrt[5]{8})$

C $3(\sqrt[5]{8})$ D $-3(\sqrt[5]{8})$

25.

17.8 cm   11.6 cm   10.9 cm   0 cm   19.7 cm
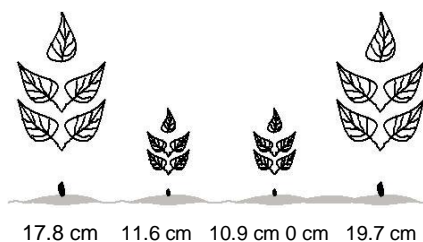
Josh planted five seeds which grew into plants. He recorded the height of each plant one month later. If he decides to water some plants twice a day. Then, what is the probability that he doesn't water the

plant, having height more than 15 cm, twice a day?

A $\dfrac{2}{5}$ B $\dfrac{3}{5}$

C $\dfrac{1}{5}$ D $\dfrac{4}{5}$

26. The price p that A make up company can charge for a certain kit is $p = 40 - 4x^2$, where x is the number of kits produced. It costs the make up company ` 15 to make each kit. Then, the polynomial (function) expressing the company's profit p by subtracting the total cost to make x kits from the total revenue is

A $-4x^3 + 4x$

B $-4x^3 + 25x$

C $-4x^2 + 5x$

D $-4x^2 + 25x$

27. The value of a for which of the equation $2ax + (a + 8)y = 32$ has a solution $(1, 2)$ is
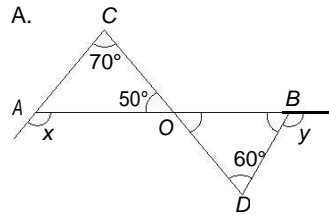
A 4

B 6

C 8

D 10

28.
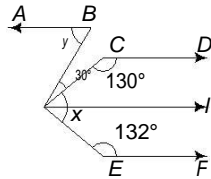
In the above figure, if $AB \| CD \| EF$ and $EF \| L_1$, then the values of x and y are respectively

A 90° and 80°

B 98° and 88°

C 98° and 80°

D 90° and 88°

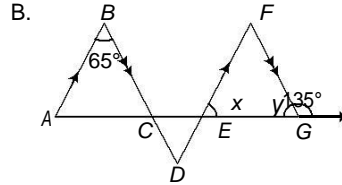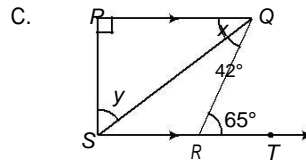**29.** Match the following :

LIST I	LIST II
A.	i. $X = 23°$ $Y = 67°$
B.	ii. $X = 120°$ $Y = 110°$
C.	iii. $X = 70°$ $Y = 45°$

CODES

	A	B	C			A	B	C
A	(i)	(ii)	(iii)	B		(ii)	(iii)	(i)
C	(i)	(iii)	(ii)	D		(ii)	(i)	(iii)

30. In adjoining figure, the plane intersects the sphere in a circle that has a diameter of 12. If the diameter of the sphere is 20, then the value of x is

A 9 cm

B 8 cm

C 10 cm

D 16 cm