MATHS

BOOKS - ARIHANT PUBLICATION BIHAR

MODEL SOLVED PAPER 2019

Section Iii Mathematics

1. Find the least number which divided by 12,18,36 and 45 leaves 8,14,32 and 41 as

remainder respectively.

A. 176

B. 180

C. 178

D. 186

Answer: A

▶ **Watch Video Solution**

2. P can do a work in 9 days and Q is 50% more efficient than P. In how many days can Q do it alone ?

A. $13\frac{1}{2}$

B. $4\frac{1}{2}$

C. 6

D. 3

Answer: C

▶ **Watch Video Solution**

3. In the making of a right circular cone whose base radius is 7 cm and altitude is 24 cm. How many area of iron sheet is required ? (Take $\pi = \dfrac{22}{7}$)

A. $708 cm^2$

B. $804 cm^2$

C. $704 cm^2$

D. $408 cm^2$

Answer: C

4. A reactangular tin sheet is 12 cm long and 5 cm wide. It is rolled such that the ends are joined together to form a cylinder, then what will be the volume of cylinder ?

A. $\dfrac{180}{\pi}cm^3$

B. $\dfrac{120}{\pi}cm^3$

C. $\dfrac{100}{\pi}cm^3$

D. $\dfrac{60}{\pi}cm^3$

Answer: A

5. A shopkeeper announces a discount of 10% on item purchased form his shop . If a customer purchased a cooker worth Rs 650, a heater worth Rs 500 and a bag worth Rs 65, then how much discount will he get ?

A. Rs 120.50

B. Rs 123.50

C. Rs 128.50

D. Rs 121.50

Answer: D

▶ **Watch Video Solution**

6. The sum of ages of two brothers will be doubled after 10 yr, if the difference between their ages is 8 yr. Then, what is the ratio of age of younger brother to age of order brother ?

A. $7:11$

B. $3:7$

C. $8:9$

D. $10:13$

Answer: B

▶ **Watch Video Solution**

7. Out of 30 teachers of a school, a teacher of age 60 years retired. In his place another teacher of age 30 years was appointed. As a

result, the mean age of the teachers will.

एक स्कूल के 30 शिक्षकों में से 60 वर्ष की आयु का एक शिक्षक सेवानिवृत्त हो गया। उसके स्थान पर 30 वर्ष की आयु के एक अन्य शिक्षक को नियुक्त किया गया। परिणामस्वरूप, शिक्षकों की माध्य आयु

A. Reduced by 6 months

B. Reduced by 1 yr

C. Same as

D. Reduced by 2 yr

Answer: B

8. 1.34 km apart from Geeta a bullet is fired from a gun. She heard the sound after 4 s. Then what is the velocity of sound ?

A. 335 m/s

B. 330 m/s

C. 300 m/s

D. 325 m/s

Answer: A

9. The compound interest for a fixed, period of time on Rs 1800 at the rate of 10% per annum is Rs 378. Then, find the time (in years).

A. 2.8

B. 3.0

C. 2.5

D. 2.0

Answer: D

10. Value of $\left\{ \left(\sqrt[n]{x^2} \right)^{\frac{n}{2}} \right\}^2$ is

A. x

B. $x^{n/2}$

C. x^2

D. $\dfrac{1}{x^2}$

Answer: C

11. If $\left(\sqrt{3}\right)^5 \times 81 = 3^n \times 3\sqrt{3}$ then the value of n is

A. 4

B. 5

C. 6

D. 3

Answer: B

▶ Watch Video Solution

12. If $x^4 + \dfrac{1}{x^4} = 119$, then the value of $x^3 - \dfrac{1}{x^3}$ is :

A. 36

B. -36

C. ± 36

D. ± 33

Answer: C

▶ **Watch Video Solution**

13. If

$999x + 888y = 1332$ and $888x + 999y = 555$,

then $x^2 - y^2$ is equal to:

A. 5

B. 7

C. 8

D. 9

Answer: B

▶ **Watch Video Solution**

14. In $\triangle ABC$ and $\triangle MNP$, if AB=2.25 cm, MP

= 4.5 cm and PN = 7.5 cm , $\angle$ ACB =$\angle MNP$ and

$\angle ABC$ = $\angle MPN$, then what is the length (in

cm) of side BC?

   A. 3.75

   B. 4.75

   C. 3.5

   D. 4.5

Answer: A

 Watch Video Solution

15. Given an equilateral triangle ABC, D, E and F are the mid-points of the sides AB, BC and AC respectively, then the quadrilateral BEFD is exactly a

    A. square

    B. rectangle

    C. trapezium

    D. rhombus

Answer: D

16. AC is a chord of that circle whose center is 'O'. If B is any point on arc AC and $\angle OCA = 20°$, then what is the measurement of $\angle ABC$?

A. $100°$

B. $40°$

C. $140°$

D. $110°$

Answer: D

---

17. The vertices of a right angled triangle right angle at P are P (3,4) , Q(7,4) and R (3,8). Then, what is the coordinates of orthocentre of ΔPQR ?

   A. $(3, 4)$

   B. $(7, 4)$

   C. $(3, 8)$

D. $(5, 6)$

Answer: A

18. When $\theta = 45°$ then what is the value of $(\sec\theta + \cos ec\theta)$?

A. $3\sqrt{2}$

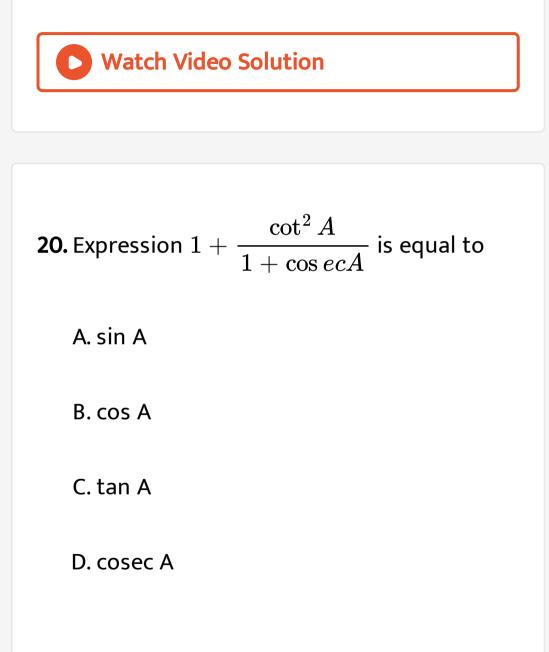B. $4\sqrt{2}$

C. $2\sqrt{2}$

D. $5\sqrt{2}$

Answer: C

19. $\sin^8 \theta + \cos^8 \theta = $?

A. $1 - 3\sin^2 \theta \cos^2 \theta$

B. $1 - 3\sin \theta \cos \theta$

C. $1 + 3\sin^2 \theta \cos^2 \theta$

D. 1

Answer: A

---

20. Expression $1 + \dfrac{\cot^2 A}{1 + \cos ecA}$ is equal to

A. sin A

B. cos A

C. tan A

D. cosec A

Answer: D

21. The shadow of a tower standing on a level plane is found to be 50 m longer when the Sun's elevation is $30°$ than when it is $60°$ What is the height of the tower ?

A. 10 m

B. $10\sqrt{3}m$

C. 20 m

D. $20\sqrt{3}m$

Answer: D

22. Which of the following is shown a graphical representation of cumulative frequency data ?

A. Histogram

B. Frequency polygon

C. Cumulative (ogive)

D. Pie-chart

Answer: C

---

23. The altitudes of two similar right angled $\triangle LMN$ and $\triangle OPQ$ are 48 cm and 36 cm, respectively. If $OP = 12cm$, then LM will be

   A. 16 cm

   B. 20 cm

   C. 12 cm

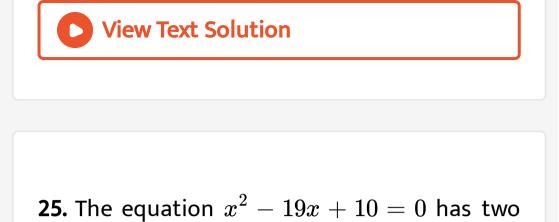   D. $\dfrac{10\sqrt{6}}{3} cm$

24. Factor of $8x^2 - 18x + 9$ is

   A. $(4x - 3)(2x + 3)$

   B. $(8x - 1)(x - 9)$
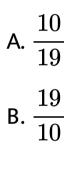
   C. $(8x - 3)(x - 3)$

   D. $(2x - 3)(4x - 3)$

Answer: A

25. The equation $x^2 - 19x + 10 = 0$ has two roots. Then, what is the sum of roots ?

A. $\dfrac{10}{19}$

B. $\dfrac{19}{10}$

C. 19

D. -19

Answer: C

26. If one root of the equation $x^2 - 6kx + 5 = 0$ is 5. Then, value of k is

A. 2

B. 1

C. -1

D. $-\dfrac{1}{2}$

Answer: B

27. If $a^x = b^y = c^z$ and $b^2 = ac,$ then show that $y = \dfrac{2zx}{z + x}$

A. $\dfrac{xy}{x + z}$

B. $\dfrac{xy}{2(x - z)}$

C. $\dfrac{xz}{2(z - x)}$

D. $\dfrac{2xz}{x + z}$

Answer: D

▶ Watch Video Solution

28. If (x +3) is one factor of $x^2 + kx + 12$, then the value of k will be

A. 8

B. 7

C. 6

D. 5

Answer: B

▶ View Text Solution