

NMMS Gujarat Mathematics

Sample Paper – 8

Duration: 20 Minutes

Maximum Marks: 20

Instructions

- This paper contains **20** Multiple Choice Questions (Single Correct Answer), modelled on the Mathematics portion of **NMMS Gujarat** (National Means-cum-Merit Scholarship).
- Each correct answer carries **+1 mark**. There is **no negative marking** for incorrect or unattempted answers.
- Only **one** option is correct per question.
- Syllabus level: **Class 7 & 8 Mathematics — NCERT / GSEB curriculum**.
- Use of mobile phones, calculators, or electronic gadgets is strictly prohibited during the examination.

Q1. Simplify using BODMAS: $\frac{3}{4} \div \left(\frac{1}{2} + \frac{1}{4} \right)$

- (A) 1
- (B) 2
- (C) $\frac{3}{4}$
- (D) $\frac{4}{3}$

Q2. Find the value of $\sqrt{1156}$.

- (A) 32
- (B) 34
- (C) 36
- (D) 38

Q3. Find the cube root of 3375 using prime factorisation.

- (A) 12
- (B) 13
- (C) 15
- (D) 18



Q4. Compare 2^{10} and 10^3 . Which of the following is correct?

- (A) $2^{10} < 10^3$
- (B) $2^{10} = 10^3$
- (C) Cannot be determined
- (D) $2^{10} > 10^3$

Q5. The sum of three consecutive odd numbers is 57. Find the largest of the three numbers.

- (A) 21
- (B) 19
- (C) 23
- (D) 17

Q6. Evaluate $2x^2 - 3x + 1$ for $x = -2$.

- (A) 3
- (B) 15
- (C) 11
- (D) 19

Q7. If $a^3 - b^3 = 56$ and $a - b = 2$, find the value of $a^2 + ab + b^2$.

- (A) 14
- (B) 56
- (C) 28
- (D) 7

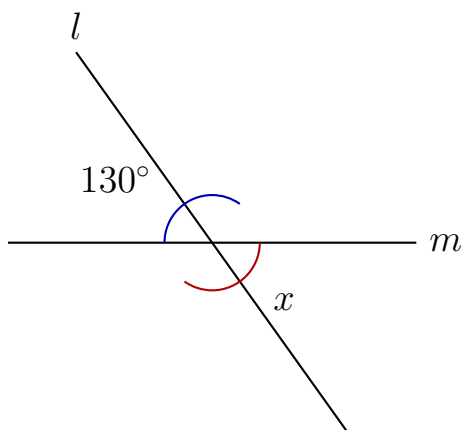
Q8. Factorise completely: $4x^2 + 12x + 9$

- (A) $(2x - 3)^2$
- (B) $(4x + 3)^2$



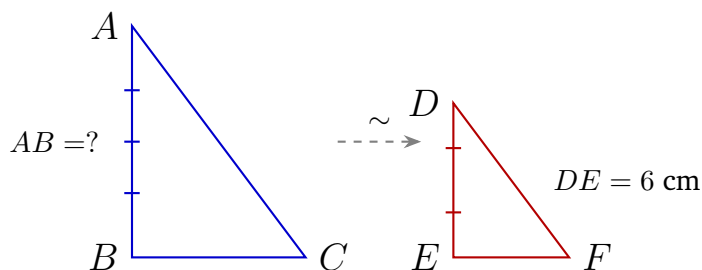
- (C) $(x + 3)^2$
(D) $(2x + 3)^2$

Q9. In the figure below, two straight lines intersect at a point. One of the angles formed is 130° . Find the measure of the vertically opposite angle x .



- (A) 130°
(B) 50°
(C) 40°
(D) 70°

Q10. Triangles ABC and DEF are similar with $\frac{AB}{DE} = \frac{3}{2}$. If $DE = 6$ cm, find AB .



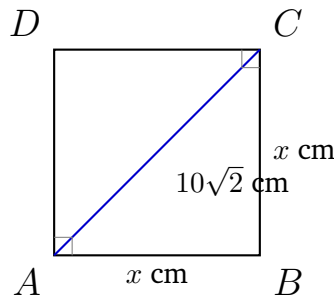
- (A) 6 cm
(B) 9 cm
(C) 12 cm
(D) 4 cm



Q11. In triangles ABC and DEF , it is given that $\angle A = \angle D$, $AB = DE$, and $\angle B = \angle E$. Which congruence rule proves $\triangle ABC \cong \triangle DEF$?

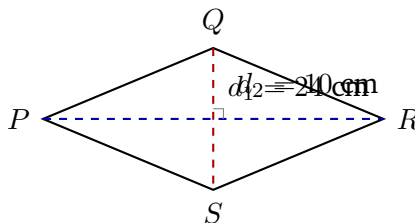
- (A) SSS (Side-Side-Side)
- (B) SAS (Side-Angle-Side)
- (C) ASA (Angle-Side-Angle)
- (D) AAS (Angle-Angle-Side)

Q12. In square $ABCD$, the diagonal $AC = 10\sqrt{2}$ cm. Find the side of the square.



- (A) 5 cm
- (B) $5\sqrt{2}$ cm
- (C) $10\sqrt{2}$ cm
- (D) 10 cm

Q13. Find the area of the rhombus shown below, whose diagonals are $d_1 = 24$ cm and $d_2 = 10$ cm.



- (A) 120 cm^2
- (B) 240 cm^2
- (C) 60 cm^2

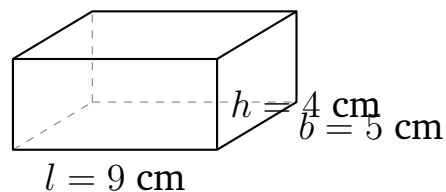


(D) 34 cm^2

Q14. The perimeter of a parallelogram is 56 cm and one of its sides is 18 cm. Find the length of the adjacent side.

- (A) 8 cm
- (B) 10 cm
- (C) 12 cm
- (D) 18 cm

Q15. Find the total surface area of the cuboid shown below.



- (A) 166 cm^2
- (B) 180 cm^2
- (C) 202 cm^2
- (D) 214 cm^2

Q16. A television costs Rs. 25000. GST is charged at 28%. Find the total cost of the television including GST.

- (A) Rs. 30000
- (B) Rs. 31000
- (C) Rs. 31500
- (D) Rs. 32000

Q17. A trader buys 50 articles for Rs. 500 and sells each article at Rs. 12. Find his profit or loss percentage.

- (A) 20% profit



- (B) 20% loss
- (C) 10% profit
- (D) 25% profit

Q18. At a simple interest rate of 12.5% per annum, in how many years will Rs. 4000 become Rs. 8000?

- (A) 6 years
- (B) 8 years
- (C) 10 years
- (D) 12 years

Q19. Find the median of the following data: 7, 3, 9, 1, 5, 11, 13

- (A) 5
- (B) 9
- (C) 7
- (D) 11

Q20. In a pie chart, a sector representing 'Sports' has a central angle of 72° . What percentage of the total does 'Sports' represent?

- (A) 72%
- (B) 36%
- (C) 25%
- (D) 20%



Detailed Solutions**Q1.****Solution**

Concept — BODMAS Rule with Rational Numbers: BODMAS stands for Brackets, Orders, Division, Multiplication, Addition, Subtraction. Solve the bracket first, then perform division.

Step 1 — Solve the bracket:

$$\frac{1}{2} + \frac{1}{4} = \frac{2}{4} + \frac{1}{4} = \frac{3}{4}$$

Step 2 — Perform the division:

$$\frac{3}{4} \div \frac{3}{4} = \frac{3}{4} \times \frac{4}{3} = \frac{12}{12} = 1$$

Why other options are wrong:

- Option B: 2 — would result if the bracket were ignored and $\frac{3}{4} \div \frac{1}{2} + \frac{1}{4}$ evaluated left to right incorrectly.
- Option C: $\frac{3}{4}$ — this is the value of the bracket alone, not the final result.
- Option D: $\frac{4}{3}$ — this is the reciprocal of $\frac{3}{4}$; a common error of inverting the wrong fraction.

Final Answer: $\frac{3}{4} \div \left(\frac{1}{2} + \frac{1}{4} \right) = 1 \Rightarrow \boxed{A}$

Answer: (A) [Go Back to Q1](#)

Q2.**Solution**

Concept — Square Root by Prime Factorisation: Factorise the number into prime factors, pair them up, and take one factor from each pair.

Step 1 — Prime factorise 1156:

$$1156 = 4 \times 289 = 2^2 \times 17^2$$



Step 2 — Extract the square root:

$$\sqrt{1156} = \sqrt{2^2 \times 17^2} = 2 \times 17 = 34$$

Verification: $34 \times 34 = 1156 \checkmark$

Why other options are wrong:

- Option A: $32^2 = 1024 \neq 1156$.
- Option C: $36^2 = 1296 \neq 1156$.
- Option D: $38^2 = 1444 \neq 1156$.

Final Answer: $\sqrt{1156} = 34 \Rightarrow$ B

Answer: (B) [Go Back to Q2](#)

Q3.

Solution

Concept — Cube Root by Prime Factorisation: Express the number as a product of prime factors in triplets; take one factor from each triplet.

Step 1 — Prime factorise 3375:

$$3375 = 3 \times 1125 = 3 \times 3 \times 375 = 3 \times 3 \times 3 \times 125 = 3^3 \times 5^3$$

Step 2 — Group into triplets and extract cube root:

$$\sqrt[3]{3375} = \sqrt[3]{3^3 \times 5^3} = \sqrt[3]{(3 \times 5)^3} = \sqrt[3]{15^3} = 15$$

Verification: $15^3 = 15 \times 15 \times 15 = 225 \times 15 = 3375 \checkmark$

Why other options are wrong:

- Option A: $12^3 = 1728 \neq 3375$.
- Option B: $13^3 = 2197 \neq 3375$.
- Option D: $18^3 = 5832 \neq 3375$.

Final Answer: $\sqrt[3]{3375} = 15 \Rightarrow$ C

Answer: (C) [Go Back to Q3](#)



Q4.

Solution

Concept — Comparing Powers by Computing Their Values: Calculate each expression and compare the results directly.

Step 1 — Compute 2^{10} :

$$2^{10} = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 = 1024$$

Step 2 — Compute 10^3 :

$$10^3 = 10 \times 10 \times 10 = 1000$$

Step 3 — Compare:

$$1024 > 1000 \implies 2^{10} > 10^3$$

Why other options are wrong:

- Option A: $2^{10} < 10^3$ — incorrect since $1024 > 1000$.
- Option B: $2^{10} = 10^3$ — incorrect since $1024 \neq 1000$.
- Option C: Cannot be determined — incorrect; both are finite numbers that can always be compared.

Final Answer: $2^{10} > 10^3 \implies$ D

Answer: (D) [Go Back to Q4](#)

Q5.

Solution

Concept — Forming a Linear Equation for Consecutive Odd Numbers: Consecutive odd numbers differ by 2. Let the three numbers be n , $n + 2$, and $n + 4$.

Step 1 — Set up and solve the equation:

$$n + (n + 2) + (n + 4) = 57 \implies 3n + 6 = 57 \implies 3n = 51 \implies n = 17$$

Step 2 — Find the largest number:

$$\text{Three numbers: } 17, 19, 21 \quad \text{Largest} = n + 4 = 17 + 4 = 21$$



Verification: $17 + 19 + 21 = 57 \checkmark$

Why other options are wrong:

- Option B: 19 — this is the middle number, not the largest.
- Option C: 23 — $19 + 21 + 23 = 63 \neq 57$.
- Option D: 17 — this is the smallest number, not the largest.

Final Answer: Largest number = 21 $\Rightarrow$ A

Answer: (A) [Go Back to Q5](#)

Q6.

Solution

Concept — Evaluating an Algebraic Expression by Substitution: Replace every x with the given value and simplify, following BODMAS carefully (note the negative value).

Step 1 — Substitute $x = -2$:

$$2x^2 - 3x + 1 = 2(-2)^2 - 3(-2) + 1$$

Step 2 — Simplify term by term:

$$(-2)^2 = 4 \implies 2 \times 4 = 8$$

$$-3 \times (-2) = +6$$

$$\text{Result} = 8 + 6 + 1 = 15$$

Why other options are wrong:

- Option A: 3 — sign error; treats $-3(-2)$ as -6 instead of $+6$.
- Option C: 11 — uses $(-2)^2 = -4$ (sign error on squaring); $2(-4) + 6 + 1 = 11$.
- Option D: 19 — uses $(-2)^2 = 4$ correctly but also adds $-(-3)(-2) = -6$ to 8: $8 + 6 + 1 + 4 = 19$ (arithmetic error).

Final Answer: $2(-2)^2 - 3(-2) + 1 = 15 \Rightarrow$ B

Answer: (B) [Go Back to Q6](#)



Q7.

Solution**Concept — Difference of Cubes Identity:**

$$a^3 - b^3 = (a - b)(a^2 + ab + b^2)$$

Step 1 — Apply the identity:

$$56 = (a - b)(a^2 + ab + b^2) = 2 \times (a^2 + ab + b^2)$$

Step 2 — Solve for $a^2 + ab + b^2$:

$$a^2 + ab + b^2 = \frac{56}{2} = 28$$

Why other options are wrong:

- Option A: 14 — divides by 4 instead of by $(a - b) = 2$.
- Option B: 56 — this is the value of $a^3 - b^3$ itself, before dividing.
- Option D: 7 — divides by 8 instead of by 2.

Final Answer: $a^2 + ab + b^2 = 28 \Rightarrow \boxed{\text{C}}$ **Answer: (C)** [Go Back to Q7](#)

Q8.

Solution**Concept — Perfect Square Trinomial Identity:**

$$(a + b)^2 = a^2 + 2ab + b^2$$

If a trinomial matches this pattern, it factors as a perfect square.

Step 1 — Identify a and b :

$$4x^2 + 12x + 9 = (2x)^2 + 2(2x)(3) + (3)^2$$

Here $a = 2x$ and $b = 3$.**Step 2 — Write the factored form:**

$$4x^2 + 12x + 9 = (2x + 3)^2$$



Verification: $(2x + 3)^2 = 4x^2 + 12x + 9 \checkmark$

Why other options are wrong:

- Option A: $(2x - 3)^2 = 4x^2 - 12x + 9$ — middle term has wrong sign.
- Option B: $(4x + 3)^2 = 16x^2 + 24x + 9$ — coefficient of x^2 is wrong.
- Option C: $(x + 3)^2 = x^2 + 6x + 9$ — both the x^2 and x coefficients are wrong.

Final Answer: $4x^2 + 12x + 9 = (2x + 3)^2 \Rightarrow \boxed{D}$

Answer: (D) [Go Back to Q8](#)

Q9.

Solution

Concept — Vertically Opposite Angles: When two straight lines intersect, the pairs of angles that are directly opposite each other (across the vertex) are called vertically opposite angles, and they are always equal.

Step 1 — Identify the relationship: The angle of 130° and the angle x are vertically opposite (they share the same vertex and are on opposite sides of it).

Step 2 — State the conclusion:

$$x = 130^\circ \quad (\text{vertically opposite angles are equal})$$

Check: Adjacent angles would be supplementary: $130^\circ + 50^\circ = 180^\circ \checkmark$

Why other options are wrong:

- Option B: 50° — this is the supplement of 130° , i.e., the adjacent angle, not the vertically opposite angle.
- Option C: 40° — not related to 130° by any standard angle relationship here.
- Option D: 70° — not related to 130° by any standard angle relationship here.

Final Answer: $x = 130^\circ \Rightarrow \boxed{A}$

Answer: (A) [Go Back to Q9](#)



Q10.

Solution

Concept — Corresponding Sides of Similar Triangles: If two triangles are similar, the ratios of their corresponding sides are equal.

Step 1 — Set up the proportion:

$$\frac{AB}{DE} = \frac{3}{2}$$

Step 2 — Substitute $DE = 6$ cm and solve:

$$\frac{AB}{6} = \frac{3}{2} \implies AB = 6 \times \frac{3}{2} = 3 \times 3 = 9 \text{ cm}$$

Verification: $\frac{9}{6} = \frac{3}{2} \checkmark$

Why other options are wrong:

- Option A: 6 cm — would mean $AB = DE$, giving ratio 1 : 1, not 3 : 2.
- Option C: 12 cm — $\frac{12}{6} = 2 \neq \frac{3}{2}$.
- Option D: 4 cm — $\frac{4}{6} = \frac{2}{3}$, which is the inverse of the given ratio.

Final Answer: $AB = 9$ cm $\Rightarrow$ B

Answer: (B) [Go Back to Q10](#)

Q11.

Solution

Concept — ASA (Angle-Side-Angle) Congruence Rule: Two triangles are congruent by ASA if two angles and the side *included* between those angles of one triangle equal the corresponding parts of the other.

Step 1 — Identify the given conditions:

- $\angle A = \angle D$ (first angle)
- $AB = DE$ (side between the two angles: $\angle A$ and $\angle B$)
- $\angle B = \angle E$ (second angle)

Step 2 — Match to a congruence criterion: The side AB (respectively DE) is *included* between angles $\angle A$ and $\angle B$ (respectively $\angle D$ and $\angle E$). Two angles and their included side are equal. This is precisely the **ASA criterion**.

Why other options are wrong:



- Option A (SSS): Needs all three pairs of sides; only one side is given.
- Option B (SAS): Needs two sides and their included angle; we have two angles and one side.
- Option D (AAS): Needs two angles and a non-included side; here the side AB is the included side between $\angle A$ and $\angle B$.

Final Answer: ASA (Angle-Side-Angle) $\Rightarrow$ C

Answer: (C) [Go Back to Q11](#)

Q12.

Solution

Concept — Diagonal of a Square: For a square with side a , the diagonal $d = a\sqrt{2}$.

Step 1 — Set up the equation:

$$d = a\sqrt{2} \implies 10\sqrt{2} = a\sqrt{2}$$

Step 2 — Solve for a :

$$a = \frac{10\sqrt{2}}{\sqrt{2}} = 10 \text{ cm}$$

Verification: Diagonal = $10\sqrt{2}$ cm $\checkmark$ (since $\sqrt{10^2 + 10^2} = \sqrt{200} = 10\sqrt{2}$)

Why other options are wrong:

- Option A: 5 cm — diagonal would be $5\sqrt{2}$ cm $\neq 10\sqrt{2}$ cm.
- Option B: $5\sqrt{2}$ cm — diagonal would be $(5\sqrt{2}) \times \sqrt{2} = 10$ cm $\neq 10\sqrt{2}$ cm.
- Option C: $10\sqrt{2}$ cm — diagonal would be $(10\sqrt{2}) \times \sqrt{2} = 20$ cm $\neq 10\sqrt{2}$ cm.

Final Answer: Side = 10 cm $\Rightarrow$ D

Answer: (D) [Go Back to Q12](#)



Q13.

Solution**Concept — Area of a Rhombus:**

$$\text{Area} = \frac{1}{2} \times d_1 \times d_2$$

where d_1 and d_2 are the lengths of the two diagonals.

Step 1 — Identify the diagonals: $d_1 = 24$ cm, $d_2 = 10$ cm.

Step 2 — Apply the formula:

$$\text{Area} = \frac{1}{2} \times 24 \times 10 = \frac{240}{2} = 120 \text{ cm}^2$$

Why other options are wrong:

- Option B: $240 \text{ cm}^2 = 24 \times 10$ — forgets to multiply by $\frac{1}{2}$.
- Option C: $60 \text{ cm}^2 = \frac{1}{2} \times 24 \times 5$ — uses half of d_2 instead of the full diagonal.
- Option D: $34 \text{ cm}^2 = d_1 + d_2$ — adds the diagonals instead of computing area.

Final Answer: Area = $120 \text{ cm}^2 \Rightarrow \boxed{\text{A}}$

Answer: (A) [Go Back to Q13](#)

Q14.

Solution

Concept — Perimeter of a Parallelogram: A parallelogram has two pairs of equal opposite sides. If the sides are a and b :

$$\text{Perimeter} = 2(a + b)$$

Step 1 — Set up the equation: Let the unknown adjacent side be x .

$$2(18 + x) = 56$$

Step 2 — Solve for x :

$$18 + x = \frac{56}{2} = 28 \implies x = 28 - 18 = 10 \text{ cm}$$

Verification: $2(18 + 10) = 2 \times 28 = 56 \text{ cm} \checkmark$



Why other options are wrong:

- Option A: 8 cm — $2(18 + 8) = 52 \neq 56$.
- Option C: 12 cm — $2(18 + 12) = 60 \neq 56$.
- Option D: 18 cm — this is the given side, not the adjacent side; $2(18 + 18) = 72 \neq 56$.

Final Answer: Adjacent side = 10 cm $\Rightarrow$ **B**

Answer: (B) [Go Back to Q14](#)

Q15.

Solution

Concept — Total Surface Area (TSA) of a Cuboid:

$$\text{TSA} = 2(lb + bh + hl)$$

where l = length, b = breadth, h = height.

Step 1 — Identify the dimensions: $l = 9$ cm, $b = 5$ cm, $h = 4$ cm.

Step 2 — Compute each face area:

$$lb = 9 \times 5 = 45 \text{ cm}^2, \quad bh = 5 \times 4 = 20 \text{ cm}^2, \quad hl = 4 \times 9 = 36 \text{ cm}^2$$

Step 3 — Apply the formula:

$$\text{TSA} = 2(45 + 20 + 36) = 2 \times 101 = 202 \text{ cm}^2$$

Why other options are wrong:

- Option A: 166 cm^2 — $2(45 + 20 + 18) = 166$; uses $h = 2$ for the hl face instead of 4.
- Option B: 180 cm^2 — $2(45 + 20 + 25) = 180$; uses $hl = 25$ instead of 36.
- Option D: 214 cm^2 — $2(45 + 20 + 42) = 214$; uses $hl = 42$ (incorrect product).

Final Answer: TSA = $202 \text{ cm}^2 \Rightarrow$ **C**

Answer: (C) [Go Back to Q15](#)



Q16.

Solution**Concept — Goods and Services Tax (GST):**

$$\text{GST Amount} = \frac{\text{GST}\%}{100} \times \text{MRP} \quad \text{Total Cost} = \text{MRP} + \text{GST Amount}$$

Step 1 — Calculate the GST amount:

$$\text{GST} = \frac{28}{100} \times 25000 = 0.28 \times 25000 = \text{Rs. } 7000$$

Step 2 — Find the total cost:

$$\text{Total} = 25000 + 7000 = \text{Rs. } 32000$$

Why other options are wrong:

- Option A: Rs. 30000 — $30000 - 25000 = 5000$, which is only 20% of Rs. 25000.
- Option B: Rs. 31000 — implies GST of Rs. 6000, which is 24%, not 28%.
- Option C: Rs. 31500 — implies GST of Rs. 6500, which is 26%, not 28%.

Final Answer: Total cost = Rs. 32000 $\Rightarrow$ DAnswer: (D) [Go Back to Q16](#)

Q17.

Solution**Concept — Profit Percentage:**

$$\text{CP per article} = \frac{\text{Total CP}}{\text{Number of articles}}, \quad \text{Profit}\% = \frac{\text{SP} - \text{CP}}{\text{CP}} \times 100$$

Step 1 — Find the cost price per article:

$$\text{CP per article} = \frac{500}{50} = \text{Rs. } 10$$

Step 2 — Compare with selling price:

$$\text{SP} = \text{Rs. } 12 > \text{CP} = \text{Rs. } 10 \implies \text{Profit}$$



$$\text{Profit per article} = 12 - 10 = \text{Rs. } 2$$

Step 3 — Calculate profit percentage:

$$\text{Profit\%} = \frac{2}{10} \times 100 = 20\%$$

Why other options are wrong:

- Option B: 20% loss — $SP > CP$, so it must be a profit, not a loss.
- Option C: 10% profit — 10% of Rs. 10 = Re. 1 profit, giving $SP = \text{Rs. } 11 \neq \text{Rs. } 12$.
- Option D: 25% profit — 25% of Rs. 10 = Rs. 2.50, giving $SP = \text{Rs. } 12.50 \neq \text{Rs. } 12$.

Final Answer: 20% profit $\Rightarrow$ A

Answer: (A) [Go Back to Q17](#)

Q18.

Solution

Concept — Simple Interest and Time to Double: When money doubles, the Simple Interest earned equals the Principal itself.

$$SI = \frac{P \times R \times T}{100} \implies T = \frac{SI \times 100}{P \times R}$$

Step 1 — Identify the required SI: Principal $P = \text{Rs. } 4000$. For the amount to become Rs. 8000:

$$SI = 8000 - 4000 = \text{Rs. } 4000$$

Step 2 — Solve for T :

$$T = \frac{4000 \times 100}{4000 \times 12.5} = \frac{100}{12.5} = \frac{1000}{125} = 8 \text{ years}$$

$$\text{Verification: } SI = \frac{4000 \times 12.5 \times 8}{100} = \frac{400000}{100} = \text{Rs. } 4000 \checkmark$$

Why other options are wrong:

- Option A: 6 years — $SI = \frac{4000 \times 12.5 \times 6}{100} = \text{Rs. } 3000 \neq \text{Rs. } 4000$.
- Option C: 10 years — $SI = \frac{4000 \times 12.5 \times 10}{100} = \text{Rs. } 5000 \neq \text{Rs. } 4000$.



- Option D: 12 years — $SI = \frac{4000 \times 12.5 \times 12}{100} = \text{Rs. } 6000 \neq \text{Rs. } 4000.$

Final Answer: Time = 8 years $\Rightarrow$ B

Answer: (B) [Go Back to Q18](#)

Q19.

Solution

Concept — Median of a Data Set: Arrange the data in ascending order. For an odd number of values (n), the median is the $\frac{n+1}{2}$ -th value.

Step 1 — Arrange in ascending order:

1, 3, 5, 7, 9, 11, 13

Step 2 — Find the middle value: There are $n = 7$ values. The median is the $\frac{7+1}{2} = 4$ th value.

$\underbrace{1, 3, 5, 7, 9, 11, 13}_{4\text{th value}=7}$

Why other options are wrong:

- Option A: 5 — this is the 3rd value in the ordered list, not the 4th.
- Option B: 9 — this is the 5th value in the ordered list, not the 4th.
- Option D: 11 — this is the 6th value in the ordered list, not the 4th.

Final Answer: Median = 7 $\Rightarrow$ C

Answer: (C) [Go Back to Q19](#)

Q20.

Solution

Concept — Reading a Pie Chart (Central Angle to Percentage): A complete circle represents 360° and 100% of the data.

$$\text{Percentage} = \frac{\text{Central angle}}{360^\circ} \times 100$$



Step 1 — Set up the calculation:

$$\text{Percentage for Sports} = \frac{72}{360} \times 100$$

Step 2 — Simplify and compute:

$$\frac{72}{360} = \frac{1}{5} \implies \frac{1}{5} \times 100 = 20\%$$

Why other options are wrong:

- Option A: 72% — confuses the degree measure with the percentage directly.
- Option B: 36% — halves the degree value ($72 \div 2 = 36$) without dividing by 360.
- Option C: 25% — corresponds to a central angle of 90° ($\frac{25}{100} \times 360 = 90^\circ \neq 72^\circ$).

Final Answer: Sports = 20% of the total $\Rightarrow$ D

Answer: (D) [Go Back to Q20](#)



Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	A	2	B	3	C	4	D	5	A
6	B	7	C	8	D	9	A	10	B
11	C	12	D	13	A	14	B	15	C
16	D	17	A	18	B	19	C	20	D

