

SNAP Quantitative, Data Interpretation and Data Sufficiency

Sample Paper – 1

Duration: 20 Minutes

Maximum Marks: 20

Instructions

- This paper contains **20** Multiple Choice Questions (Single Correct Answer), modelled on the Quantitative, Data Interpretation and Data Sufficiency section of **SNAP** (Symbiosis National Aptitude Test).
- Each correct answer carries **+1 mark**. **0.25 marks** are deducted for every wrong answer. Unattempted questions carry no penalty.
- Only **one** option is correct. Choose the most appropriate answer.
- SNAP is a computer-based test with no sectional time limit; attempt this practice paper in one timed sitting of about **20 minutes**.
- Use of mobile phones, calculators, or electronic gadgets is strictly prohibited.

Part A: Arithmetic

- Q1.** A shopkeeper marks his goods 40% above the cost price and then allows a discount of 25% on the marked price. What is his net profit percentage?
- (A) 10%
- (B) 15%
- (C) 5%
- (D) 8%
- Q2.** A sum of Rs. 1200 is divided among A, B and C in the ratio 2 : 3 : 5. What is A's share?
- (A) Rs. 240



- (B) Rs. 360
- (C) Rs. 600
- (D) Rs. 480

Q3. An article bought for Rs. 800 is sold for Rs. 920. What is the profit percentage?

- (A) 12%
- (B) 10%
- (C) 20%
- (D) 15%

Q4. Find the simple interest on Rs. 5000 at 8% per annum for 3 years.

- (A) Rs. 1200
- (B) Rs. 1400
- (C) Rs. 1500
- (D) Rs. 1000

Q5. The average of 5 numbers is 20. If one of the numbers, which is 12, is removed, what is the average of the remaining four numbers?

- (A) 18
- (B) 20
- (C) 22
- (D) 24

Q6. A train 120 metres long crosses a pole in 6 seconds. What is its speed in km/h?

- (A) 60
- (B) 72
- (C) 80



(D) 66

Part B: Algebra and Number System

Q7. If $x + \frac{1}{x} = 4$, what is the value of $x^2 + \frac{1}{x^2}$?

(A) 12

(B) 14

(C) 16

(D) 18

Q8. The LCM of two numbers is 48 and their HCF is 8. If one of the numbers is 16, what is the other number?

(A) 12

(B) 16

(C) 24

(D) 32

Q9. Solve for x : $3x - 7 = 2x + 5$.

(A) 10

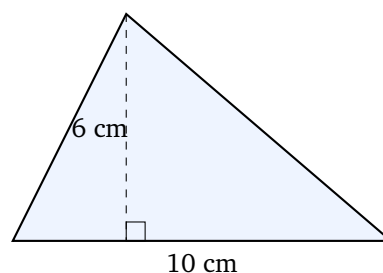
(B) 12

(C) 14

(D) 9

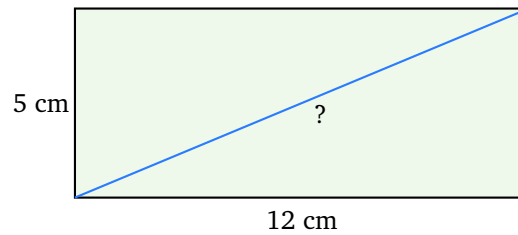
Part C: Geometry and Mensuration

Q10. Find the area of the triangle shown below, with base 10 cm and height 6 cm.



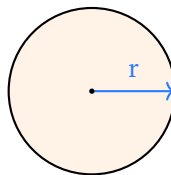
- (A) 60 sq. cm
- (B) 16 sq. cm
- (C) 25 sq. cm
- (D) 30 sq. cm

Q11. A rectangle has length 12 cm and breadth 5 cm. Find the length of its diagonal.



- (A) 13 cm
- (B) 17 cm
- (C) 15 cm
- (D) 11 cm

Q12. The circumference of a circle is 44 cm. Find its radius. (Take $\pi = \frac{22}{7}$.)



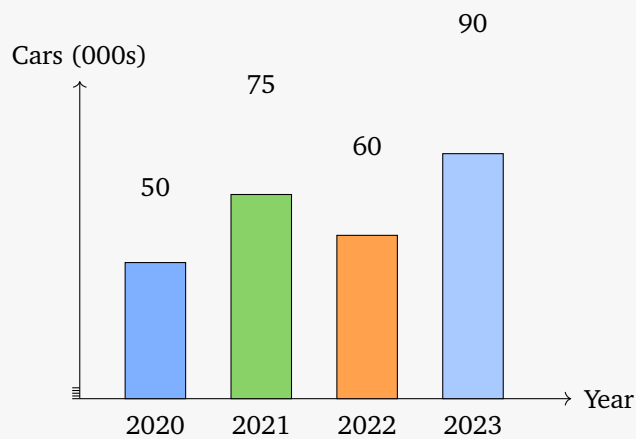
- (A) 14 cm
- (B) 11 cm
- (C) 3.5 cm
- (D) 7 cm

Part D: Data Interpretation

Directions (Q13–Q16): The bar chart below shows the number of cars (in thousands) sold by a company in four consecutive years. Study it and



answer the questions that follow.



- Q13.** In which year did the company sell the highest number of cars?
- (A) 2023
(B) 2022
(C) 2021
(D) 2020
- Q14.** What is the total number of cars (in thousands) sold over the four years?
- (A) 275
(B) 265
(C) 285
(D) 270
- Q15.** What is the percentage increase in the number of cars sold from 2020 to 2021?
- (A) 25%
(B) 40%
(C) 75%
(D) 50%
- Q16.** What is the average number of cars (in thousands) sold per year over the four years?



- (A) 70
- (B) 68.75
- (C) 65
- (D) 72

Part E: Data Sufficiency

Directions (Q17–Q20): Each question is followed by two statements, I and II. Decide whether the statements are sufficient to answer the question, and mark:

- (A) if Statement I alone is sufficient but Statement II alone is not;
- (B) if Statement II alone is sufficient but Statement I alone is not;
- (C) if both statements together are sufficient but neither alone is;
- (D) if either statement alone is sufficient.

Q17. What is the value of the number x ?

- I. x is a prime number less than 10.
- II. x is the only even prime number.

- (A) Statement I alone is sufficient
- (B) Statement II alone is sufficient
- (C) Both statements together are needed
- (D) Either statement alone is sufficient

Q18. What is the present age of the father?

- I. The father is 4 times as old as his son.
- II. The sum of the ages of the father and the son is 50 years.

- (A) Statement I alone is sufficient
- (B) Statement II alone is sufficient
- (C) Both statements together are needed
- (D) Either statement alone is sufficient



- Q19.** What is the speed of the boat in still water?
- I. The boat covers 20 km downstream in 2 hours.
 - II. The boat covers 12 km upstream in 2 hours.
- (A) Statement I alone is sufficient
- (B) Statement II alone is sufficient
- (C) Both statements together are needed
- (D) Either statement alone is sufficient

- Q20.** What is the value of x ?
- I. $x + 5 = 12$.
 - II. $2x = 14$.
- (A) Statement I alone is sufficient
- (B) Statement II alone is sufficient
- (C) Both statements together are needed
- (D) Either statement alone is sufficient



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

Concept — Markup and discount: Take the cost price as a convenient value and apply each change in turn.

Step 1: Let the cost price be Rs. 100. A markup of 40% gives a marked price of Rs. 140.

Step 2: A discount of 25% on Rs. 140 is $0.25 \times 140 = \text{Rs. } 35$.

Step 3: Selling price = $140 - 35 = \text{Rs. } 105$.

Step 4: Profit = $105 - 100 = \text{Rs. } 5$ on a cost of Rs. 100, so the profit is 5%.

Why other options are wrong:

- Option A: 10% wrongly subtracts 25% from 40% without applying the discount on the higher marked price.
- Option B: 15% ignores the discount entirely.
- Option D: 8% comes from an incorrect base for the discount.

Final Answer: The net profit is 5% $\Rightarrow$ **C**

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

Q2.**Solution**

Concept — Ratio division: Add the ratio parts, then give each person their share of the total.

Step 1: The ratio is 2 : 3 : 5, so the total number of parts is $2 + 3 + 5 = 10$.

Step 2: One part = $\frac{1200}{10} = \text{Rs. } 120$.

Step 3: A's share = $2 \times 120 = \text{Rs. } 240$.

Why other options are wrong:

- Option B: Rs. 360 is B's share (3 parts).
- Option C: Rs. 600 is C's share (5 parts).
- Option D: Rs. 480 does not match any part of the ratio.

Final Answer: A's share is Rs. 240 $\Rightarrow$ **A**



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

Q3.

Solution

Concept — Profit percentage: Profit percentage is the profit expressed as a percentage of the cost price.

Step 1: Profit = $920 - 800 = \text{Rs. } 120$.

Step 2: Profit percentage = $\frac{120}{800} \times 100 = 15\%$.

Why other options are wrong:

- Option A: 12% would need a profit of Rs. 96.
- Option B: 10% would need a profit of Rs. 80.
- Option C: 20% would need a profit of Rs. 160.

Final Answer: The profit is 15% $\Rightarrow$ **D**

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

Q4.

Solution

Concept — Simple interest: $SI = \frac{P \times R \times T}{100}$.

Step 1: Here $P = 5000$, $R = 8$ and $T = 3$.

Step 2: $SI = \frac{5000 \times 8 \times 3}{100} = \frac{120000}{100} = \text{Rs. } 1200$.

Why other options are wrong:

- Option B: Rs. 1400 uses a wrong rate or time.
- Option C: Rs. 1500 would need a rate of 10%.
- Option D: Rs. 1000 undercounts the interest.

Final Answer: The simple interest is Rs. 1200 $\Rightarrow$ **A**

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



Q5.

Solution

Concept — Average: Total = average $\times$ count; adjust the total when a value is removed.

Step 1: Sum of the 5 numbers = $20 \times 5 = 100$.

Step 2: Removing 12 leaves a sum of $100 - 12 = 88$ over 4 numbers.

Step 3: New average = $\frac{88}{4} = 22$.

Why other options are wrong:

- Option A: 18 would need the removed sum to be 28.
- Option B: 20 wrongly assumes the average does not change.
- Option D: 24 overstates the remaining average.

Final Answer: The new average is 22 $\Rightarrow$ **C**

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

Q6.

Solution

Concept — Speed: Speed = $\frac{\text{distance}}{\text{time}}$; to cross a pole the train covers its own length.

Step 1: Speed = $\frac{120 \text{ m}}{6 \text{ s}} = 20 \text{ m/s}$.

Step 2: Convert to km/h by multiplying by $\frac{18}{5}$: $20 \times \frac{18}{5} = 72 \text{ km/h}$.

Why other options are wrong:

- Option A: 60 km/h uses a wrong conversion factor.
- Option C: 80 km/h overstates the speed.
- Option D: 66 km/h does not match 20 m/s.

Final Answer: The speed is 72 km/h $\Rightarrow$ **B**

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



Q7.

Solution

Concept — Algebraic identity: $x^2 + \frac{1}{x^2} = \left(x + \frac{1}{x}\right)^2 - 2$.

Step 1: We are given $x + \frac{1}{x} = 4$.

Step 2: Square it: $\left(x + \frac{1}{x}\right)^2 = 16$.

Step 3: Subtract 2: $x^2 + \frac{1}{x^2} = 16 - 2 = 14$.

Why other options are wrong:

- Option A: 12 subtracts 4 instead of 2.
- Option C: 16 forgets to subtract 2.
- Option D: 18 adds 2 instead of subtracting.

Final Answer: The value is 14 $\Rightarrow$ **B**

Answer: (B) [Go Back to Q7](#)

Q8.

Solution

Concept — LCM and HCF: For two numbers, product of the numbers = LCM $\times$ HCF.

Step 1: Product of the two numbers = $48 \times 8 = 384$.

Step 2: One number is 16, so the other = $\frac{384}{16} = 24$.

Why other options are wrong:

- Option A: 12 gives a product of 192, not 384.
- Option B: 16 gives a product of 256.
- Option D: 32 gives a product of 512.

Final Answer: The other number is 24 $\Rightarrow$ **C**

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



Q9.

Solution

Concept — Linear equation: Collect the variable terms on one side and the constants on the other.

Step 1: Start with $3x - 7 = 2x + 5$.

Step 2: Subtract $2x$ from both sides: $x - 7 = 5$.

Step 3: Add 7 to both sides: $x = 12$.

Why other options are wrong:

- Option A: 10 does not satisfy the equation.
- Option C: 14 gives $35 \neq 33$.
- Option D: 9 gives $20 \neq 23$.

Final Answer: $x = 12 \Rightarrow$ B

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

Q10.

Solution

Concept — Area of a triangle: $\text{Area} = \frac{1}{2} \times \text{base} \times \text{height}$.

Step 1: Here base = 10 cm and height = 6 cm.

Step 2: $\text{Area} = \frac{1}{2} \times 10 \times 6 = 30 \text{ sq. cm}$.

Why other options are wrong:

- Option A: 60 sq. cm forgets the factor of one-half.
- Option B: 16 sq. cm adds the base and height instead of multiplying.
- Option C: 25 sq. cm does not follow from the given values.

Final Answer: The area is 30 sq. cm $\Rightarrow$ D

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



Q11.

Solution

Concept — Diagonal of a rectangle: Diagonal = $\sqrt{\text{length}^2 + \text{breadth}^2}$ (Pythagoras theorem).

Step 1: $\text{length}^2 + \text{breadth}^2 = 12^2 + 5^2 = 144 + 25 = 169$.

Step 2: Diagonal = $\sqrt{169} = 13$ cm.

Why other options are wrong:

- Option B: 17 cm adds the sides (12 + 5) instead of using Pythagoras.
- Option C: 15 cm does not satisfy the theorem.
- Option D: 11 cm subtracts the squares wrongly.

Final Answer: The diagonal is 13 cm $\Rightarrow$ **A**

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

Q12.

Solution

Concept — Circumference: Circumference = $2\pi r$, so $r = \frac{\text{circumference}}{2\pi}$.

Step 1: $2\pi r = 44$, so $2 \times \frac{22}{7} \times r = 44$.

Step 2: $\frac{44}{7} r = 44$, which gives $r = 44 \times \frac{7}{44} = 7$ cm.

Why other options are wrong:

- Option A: 14 cm is the diameter, not the radius.
- Option B: 11 cm does not satisfy the formula.
- Option C: 3.5 cm is half of the correct radius.

Final Answer: The radius is 7 cm $\Rightarrow$ **D**

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



Q13.

Solution

Concept — Reading a bar chart: The tallest bar shows the largest value.

Step 1: The values are 2020 = 50, 2021 = 75, 2022 = 60, 2023 = 90 (thousand).

Step 2: The largest value, 90, belongs to the year 2023.

Why other options are wrong:

- Option B: 2022 sold 60 thousand, not the highest.
- Option C: 2021 sold 75 thousand.
- Option D: 2020 sold the least, 50 thousand.

Final Answer: Sales were highest in 2023 $\Rightarrow$ **A**

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

Q14.

Solution

Concept — Total from a chart: Add the values of all the bars.

Step 1: Total = 50 + 75 + 60 + 90.

Step 2: 50 + 75 = 125; 125 + 60 = 185; 185 + 90 = 275 (thousand).

Why other options are wrong:

- Option B: 265 misreads one of the bars.
- Option C: 285 overcounts by 10.
- Option D: 270 undercounts by 5.

Final Answer: The total is 275 thousand $\Rightarrow$ **A**

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

Q15.

Solution

Concept — Percentage increase: Increase percentage = $\frac{\text{rise}}{\text{original}} \times 100$.

Step 1: Rise from 2020 to 2021 = 75 - 50 = 25 thousand.



Step 2: Percentage increase = $\frac{25}{50} \times 100 = 50\%$.

Why other options are wrong:

- Option A: 25% wrongly uses 100 as the base.
- Option B: 40% does not match the values.
- Option C: 75% uses the 2021 figure as the rise.

Final Answer: The increase is 50% $\Rightarrow$ **D**

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

Q16.

Solution

Concept — Average: Average = $\frac{\text{total}}{\text{number of years}}$.

Step 1: Total over four years = 275 thousand (from Q14).

Step 2: Average = $\frac{275}{4} = 68.75$ thousand.

Why other options are wrong:

- Option A: 70 rounds off and is not exact.
- Option C: 65 is below the true average.
- Option D: 72 is above the true average.

Final Answer: The average is 68.75 thousand $\Rightarrow$ **B**

Answer: (B) [Go Back to Q16](#)

Q17.

Solution

Concept — Data sufficiency: Test each statement on its own to see if it pins down a single value.

Statement I: “ x is a prime number less than 10” allows 2, 3, 5 or 7. This does not give a unique value, so I alone is not sufficient.

Statement II: “ x is the only even prime number” fixes $x = 2$, since 2 is the only even prime. This gives a unique value, so II alone is sufficient.

Conclusion: Statement II alone is sufficient but Statement I alone is not.



Final Answer: Statement II alone is sufficient $\Rightarrow$ **B**

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

Q18.

Solution

Concept — Data sufficiency: A single ratio or a single sum alone cannot fix two ages; together they can.

Statement I: “Father is 4 times the son” gives only the ratio $F = 4S$, with many possible values, so I alone is not sufficient.

Statement II: “The sum of ages is 50” gives $F + S = 50$, again with many possibilities, so II alone is not sufficient.

Both together: Substitute $F = 4S$ into $F + S = 50$ to get $5S = 50$, so $S = 10$ and $F = 40$. A unique answer results only when both are used.

Final Answer: Both statements together are needed $\Rightarrow$ **C**

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

Q19.

Solution

Concept — Data sufficiency: Boat speed in still water needs both the downstream and upstream speeds.

Statement I: Downstream speed $= \frac{20}{2} = 10$ km/h, so $b + c = 10$. With two unknowns, I alone is not sufficient.

Statement II: Upstream speed $= \frac{12}{2} = 6$ km/h, so $b - c = 6$. Alone this is not sufficient either.

Both together: Adding the equations, $2b = 16$, so $b = 8$ km/h. A unique answer needs both statements.

Final Answer: Both statements together are needed $\Rightarrow$ **C**

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



Q20.

Solution

Concept — Data sufficiency: If each statement alone fixes the value, either one is sufficient.

Statement I: $x + 5 = 12$ gives $x = 7$ on its own, so I alone is sufficient.

Statement II: $2x = 14$ gives $x = 7$ on its own, so II alone is sufficient.

Conclusion: Each statement alone gives the same unique value, so either alone is sufficient.

Final Answer: Either statement alone is sufficient $\Rightarrow$ D

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



Answer Key

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

