# SNAP Quantitative, Data Interpretation and Data Sufficiency

## Sample Paper – 2

**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.** In an election between two candidates, the winner secured 60% of the total votes and won by 800 votes. How many votes were cast in total?

(A) 3600

(B) 4400

(C) 4000

(D) 4200

**Q2.** A trader buys an article for Rs. 250 and sells it for Rs. 300. What is his profit percentage?

(A) 20%

(B) 25%

(C) 15%

(D) 18%

**Q3.** A sum of Rs. 1500 is divided among P, Q and R in the ratio 3 : 4 : 8. What is R's share?

(A) Rs. 300

(B) Rs. 400

(C) Rs. 600

(D) Rs. 800

**Q4.** Find the simple interest on Rs. 4000 at 6% per annum for 2 years.

(A) Rs. 400

(B) Rs. 480

(C) Rs. 500

(D) Rs. 360

**Q5.** The average of 6 numbers is 15. If one of the numbers, which is 25, is removed, what is the average of the remaining five numbers?

(A) 12

(B) 14

(C) 13

(D) 15

**Q6.** A train travels 240 km in 3 hours at a uniform speed. What is its speed in km/h?

(A) 70

(B) 80

(C) 90

(D) 75

## Part B: Algebra and Number System

**Q7.** If $a + b = 7$ and $ab = 12$, what is the value of $a^2 + b^2$?

(A) 25

(B) 27

(C) 23

(D) 24

**Q8.** The HCF of two numbers is 6 and their LCM is 60. If one of the numbers is 12, what is the other number?

(A) 24

(B) 30

(C) 36

(D) 18

**Q9.** Solve for $x$: $5x - 3 = 2x + 9$.

(A) 3

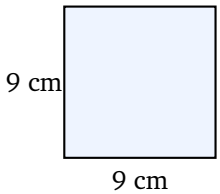
(B) 4

(C) 5

(D) 6

## Part C: Geometry and Mensuration

**Q10.** Find the area of the square shown below, whose side measures 9 cm.



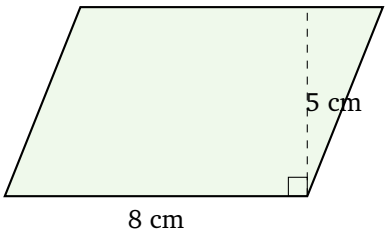

(A) 36 sq. cm

(B) 18 sq. cm

(C) 72 sq. cm

(D) 81 sq. cm

**Q11.** Find the area of the parallelogram shown below, with base 8 cm and height 5 cm.



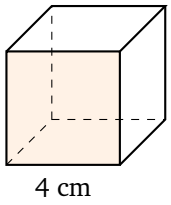

(A) 13 sq. cm

(B) 20 sq. cm

(C) 40 sq. cm

(D) 45 sq. cm

**Q12.** Find the volume of the cube shown below, whose edge measures 4 cm.




(A) 16 cu. cm

(B) 48 cu. cm

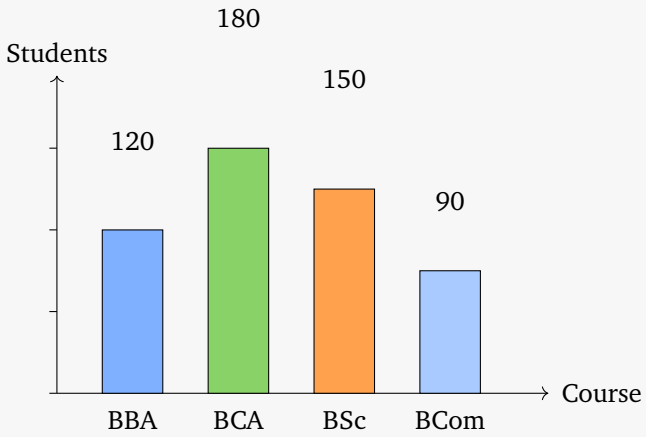
(C) 12 cu. cm

(D) 64 cu. cm

## Part D: Data Interpretation

**Directions (Q13–Q16):** The bar chart below shows the number of students enrolled in four different courses at an institute. Study it and an-

swer the questions that follow.




**Q13.** In which course is the enrollment the highest?

(A) BSc

(B) BCom

(C) BCA

(D) BBA

**Q14.** What is the total number of students enrolled across all four courses?

(A) 540

(B) 520

(C) 560

(D) 530

**Q15.** The enrollment in BCom is what percentage of the enrollment in BCA?

(A) 50%

(B) 60%

(C) 75%

(D) 45%

**Q16.** What is the average number of students enrolled per course?

(A) 120

(B) 150

(C) 145

(D) 135

## 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 two-digit number $N$?

**I.** $N$ is a multiple of 12 that is less than 50.

**II.** $N$ is the smallest two-digit 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 Ravi?

**I.** Five years ago, Ravi's age was 20 years.

**II.** Ravi is older than his younger sister.

(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 value of $x$?

**I.** $3x = 21$.

**II.** $x - 2 = 5$.

(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 area of a rectangle?

**I.** The length of the rectangle is 8 cm.

**II.** The breadth of the rectangle is 5 cm.

(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 — Percentage and margin of victory:** In a two-candidate election the two vote shares add up to 100%, and their difference equals the winning margin.

**Step 1:** The winner got 60% of the votes, so the loser got $100 - 60 = 40\%$.

**Step 2:** The difference in their shares $= 60\% - 40\% = 20\%$ of the total.

**Step 3:** This difference equals the margin of 800 votes, so $20\%$ of the total $= 800$.

**Step 4:** Total votes $= \dfrac{800}{20} \times 100 = 4000$.

**Why other options are wrong:**

- Option A: 3600 would make 20% equal to 720, not 800.
- Option B: 4400 would make 20% equal to 880.
- Option D: 4200 would make 20% equal to 840.

**Final Answer:** The total number of votes is 4000 $\Rightarrow$ $\boxed{\text{C}}$

**Answer: (C)** Go Back to Q1

### Q2.

**Solution**

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

**Step 1:** Profit $= 300 - 250 =$ Rs. 50.

**Step 2:** Profit percentage $= \dfrac{50}{250} \times 100 = 20\%$.

**Why other options are wrong:**

- Option B: 25% would need a profit of Rs. 62.50.
- Option C: 15% would need a profit of Rs. 37.50.
- Option D: 18% would need a profit of Rs. 45.

**Final Answer:** The profit is 20% $\Rightarrow$ $\boxed{\text{A}}$

**Answer: (A)** Go Back to Q2

## Q3.

**Solution**

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

**Step 1:** The ratio is $3 : 4 : 8$, so the total number of parts is $3 + 4 + 8 = 15$.

**Step 2:** One part $= \dfrac{1500}{15} =$ Rs. 100.

**Step 3:** R's share $= 8 \times 100 =$ Rs. 800.

**Why other options are wrong:**

- Option A: Rs. 300 is P's share (3 parts).
- Option B: Rs. 400 is Q's share (4 parts).
- Option C: Rs. 600 does not match any part of the ratio.

**Final Answer:** R's share is Rs. 800 $\Rightarrow$ $\boxed{\text{D}}$

**Answer: (D)** Go Back to Q3

## Q4.

**Solution**

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

**Step 1:** Here $P = 4000$, $R = 6$ and $T = 2$.

**Step 2:** SI $= \dfrac{4000 \times 6 \times 2}{100} = \dfrac{48000}{100} =$ Rs. 480.

**Why other options are wrong:**

- Option A: Rs. 400 uses a wrong rate or time.
- Option C: Rs. 500 does not follow from the formula.
- Option D: Rs. 360 undercounts the interest.

**Final Answer:** The simple interest is Rs. 480 $\Rightarrow$ $\boxed{\text{B}}$

**Answer: (B)** Go Back to Q4

## Q5.

**Solution**

**Concept — Average:** Total = average × count; adjust the total when a value is removed.

**Step 1:** Sum of the 6 numbers $= 15 \times 6 = 90$.

**Step 2:** Removing 25 leaves a sum of $90 - 25 = 65$ over 5 numbers.

**Step 3:** New average $= \dfrac{65}{5} = 13$.

**Why other options are wrong:**

- Option A: 12 would need the remaining sum to be 60.
- Option B: 14 would need the remaining sum to be 70.
- Option D: 15 wrongly assumes the average does not change.

**Final Answer:** The new average is 13 $\Rightarrow$ C

**Answer: (C)** Go Back to Q5

## Q6.

**Solution**

**Concept — Speed:** Speed $= \dfrac{\text{distance}}{\text{time}}$.

**Step 1:** Distance $= 240$ km and time $= 3$ hours.

**Step 2:** Speed $= \dfrac{240}{3} = 80$ km/h.

**Why other options are wrong:**

- Option A: 70 km/h would cover only 210 km in 3 hours.
- Option C: 90 km/h would cover 270 km in 3 hours.
- Option D: 75 km/h would cover 225 km in 3 hours.

**Final Answer:** The speed is 80 km/h $\Rightarrow$ B

**Answer: (B)** Go Back to Q6

## Q7.

**Solution**

**Concept — Algebraic identity:** $a^2 + b^2 = (a+b)^2 - 2ab$.

**Step 1:** We are given $a + b = 7$ and $ab = 12$.

**Step 2:** Square the sum: $(a+b)^2 = 7^2 = 49$.

**Step 3:** Subtract $2ab$: $a^2 + b^2 = 49 - 2 \times 12 = 49 - 24 = 25$.

**Why other options are wrong:**

- Option B: 27 subtracts $2 \times 11$ by mistake.
- Option C: 23 subtracts $2 \times 13$ by mistake.
- Option D: 24 forgets to square the sum correctly.

**Final Answer:** The value is 25 $\Rightarrow$ $\boxed{\text{A}}$

**Answer: (A)** 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 $= 60 \times 6 = 360$.

**Step 2:** One number is 12, so the other $= \dfrac{360}{12} = 30$.

**Why other options are wrong:**

- Option A: 24 gives a product of 288, not 360.
- Option C: 36 gives a product of 432.
- Option D: 18 gives a product of 216.

**Final Answer:** The other number is 30 $\Rightarrow$ $\boxed{\text{B}}$

**Answer: (B)** 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 $5x - 3 = 2x + 9$.

**Step 2:** Subtract $2x$ from both sides: $3x - 3 = 9$.

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

**Step 4:** Divide by 3: $x = 4$.

**Why other options are wrong:**

- Option A: 3 gives $12 \neq 15$ when substituted.
- Option C: 5 gives $22 \neq 19$.
- Option D: 6 gives $27 \neq 21$.

**Final Answer:** $x = 4 \Rightarrow$ B

**Answer: (B)** Go Back to Q9

## Q10.

**Solution**

**Concept — Area of a square:** Area $=$ side $\times$ side $=$ side$^2$.

**Step 1:** Here the side $= 9$ cm.

**Step 2:** Area $= 9 \times 9 = 81$ sq. cm.

**Why other options are wrong:**

- Option A: 36 sq. cm uses a side of 6, not 9.
- Option B: 18 sq. cm doubles the side instead of squaring it.
- Option C: 72 sq. cm does not follow from the given side.

**Final Answer:** The area is 81 sq. cm $\Rightarrow$ D

**Answer: (D)** Go Back to Q10

## Q11.

**Solution**

**Concept — Area of a parallelogram:** Area $=$ base $\times$ height.

**Step 1:** Here base $= 8$ cm and height $= 5$ cm.

**Step 2:** Area $= 8 \times 5 = 40$ sq. cm.

**Why other options are wrong:**

- Option A: 13 sq. cm adds the base and height instead of multiplying.
- Option B: 20 sq. cm halves the product as if it were a triangle.
- Option D: 45 sq. cm does not follow from the given values.

**Final Answer:** The area is 40 sq. cm $\Rightarrow$ C

**Answer: (C)** Go Back to Q11

## Q12.

**Solution**

**Concept — Volume of a cube:** Volume $=$ edge $\times$ edge $\times$ edge $=$ edge$^3$.

**Step 1:** Here the edge $= 4$ cm.

**Step 2:** Volume $= 4 \times 4 \times 4 = 64$ cu. cm.

**Why other options are wrong:**

- Option A: 16 cu. cm squares the edge instead of cubing it.
- Option B: 48 cu. cm multiplies the edge by 12 by mistake.
- Option C: 12 cu. cm multiplies the edge by 3 as if finding a perimeter.

**Final Answer:** The volume is 64 cu. 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 BBA $= 120$, BCA $= 180$, BSc $= 150$, BCom $= 90$.

**Step 2:** The largest value, 180, belongs to the BCA course.

**Why other options are wrong:**

- Option A: BSc has 150 students, not the highest.
- Option B: BCom has the fewest, 90 students.
- Option D: BBA has 120 students.

**Final Answer:** Enrollment is highest in BCA $\Rightarrow$ $\boxed{\text{C}}$

**Answer: (C)** Go Back to Q13

## Q14.

### Solution

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

**Step 1:** Total $= 120 + 180 + 150 + 90$.

**Step 2:** $120 + 180 = 300$; $300 + 150 = 450$; $450 + 90 = 540$.

**Why other options are wrong:**

- Option B: 520 misreads one of the bars.
- Option C: 560 overcounts by 20.
- Option D: 530 undercounts by 10.

**Final Answer:** The total is 540 students $\Rightarrow$ $\boxed{\text{A}}$

**Answer: (A)** Go Back to Q14

## Q15.

### Solution

**Concept — Percentage of one quantity relative to another:** Required percentage $= \dfrac{\text{part}}{\text{whole}} \times 100$.

**Step 1:** BCom enrollment $= 90$ and BCA enrollment $= 180$.

**Step 2:** Required percentage $= \dfrac{90}{180} \times 100 = 50\%$.

**Why other options are wrong:**

- Option B: 60% would need BCom to be 108.
- Option C: 75% would need BCom to be 135.
- Option D: 45% would need BCom to be 81.

**Final Answer:** BCom is 50% of BCA $\Rightarrow$ $\boxed{\text{A}}$

**Answer: (A)** Go Back to Q15

## Q16.

### Solution

**Concept — Average:** Average $= \dfrac{\text{total}}{\text{number of courses}}$.

**Step 1:** Total across four courses $= 540$ (from Q14).

**Step 2:** Average $= \dfrac{540}{4} = 135$.

**Why other options are wrong:**

- Option A: 120 is below the true average.
- Option B: 150 is above the true average.
- Option C: 145 does not equal $540 \div 4$.

**Final Answer:** The average is 135 students $\Rightarrow$ D

**Answer: (D)** 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:** "$N$ is a multiple of 12 that is less than 50" allows 12, 24, 36 or 48. This does not give a unique value, so I alone is not sufficient.

**Statement II:** "$N$ is the smallest two-digit prime number" fixes $N = 11$, since 11 is the smallest prime with two digits. 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 statement is sufficient only if it fixes a single value.

**Statement I:** "Five years ago, Ravi's age was 20" means his present age $= 20+5 = 25$ years. This gives a unique value, so I alone is sufficient.

**Statement II:** "Ravi is older than his younger sister" gives no number at all, so II alone is not sufficient.

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

**Final Answer:** Statement I alone is sufficient $\Rightarrow$ $\boxed{\text{A}}$

**Answer: (A)** Go Back to Q18

## Q19.

**Solution**

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

**Statement I:** $3x = 21$ gives $x = 7$ on its own, so I alone is sufficient.

**Statement II:** $x - 2 = 5$ 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 $\Rightarrow$ $\boxed{\text{D}}$

**Answer: (D)** Go Back to Q19

## Q20.

**Solution**

**Concept — Data sufficiency:** The area of a rectangle needs both its length and its breadth.

**Statement I:** "The length is 8 cm" gives only one dimension, so the area cannot be found. I alone is not sufficient.

**Statement II:** "The breadth is 5 cm" gives only the other dimension, so the area cannot be found. II alone is not sufficient.

**Both together:** With length $= 8$ cm and breadth $= 5$ cm, area $= 8 \times 5 = 40$ sq.

cm. A unique answer results only when both are used.

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

**Answer: (C)** Go Back to Q20

# Answer Key

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