## DATA SUFFICIENCY

Directions (1-15): Each of the questions below consists of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read the statements and give answer:

1) If the data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
2) If the data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
3) If the data either in statement $I$ alone or in statement II alone are sufficient to answer the question.
4) If the data given in both the statements I \& II together are not sufficient to answer the question.
5) If the data in both the statements I \& II together are necessary to answer the question.
1. What is the two digit positive number?
I. Sum of the two digits of the number is 8 .
II. Sum of the two digits is 3 more than the higher digit.

ANSWER: 4
If $a$ and $b$ be the two digits of the number (say $a>b$ )
From I: $\mathrm{a}+\mathrm{b}=8$
But the values of $a$ and $b$ cannot be found.
So data in I alone are not sufficient to answer the question.
From II: $(a+b)-a=3$

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\Rightarrow \mathrm{b}=3
$$

But "a" value cannot be found.
So data given in II alone are not sufficient to answer the question.
If I and II are combined
$\mathrm{b}=3 \quad \mathrm{a}=8-3=5$
But the two digit number can be either 35 or 53 .

* The data given in I and II together are not sufficient to answer the question.

2. The symbol $\infty$ represents one of the following operations: addition, subtraction, multiplication or division. What is the value of $6 \infty 4$ ?
I. $0 \infty 5=5$
II. $5 \infty 0=5$

ANSWER: 1
From I: $\mathrm{O}+5=5, \quad \mathrm{O}-5^{\neq} 5, \mathrm{o} \times 5^{\neq} 5$ and $0 \div 5^{\neq 5} 5$
So symbol $\infty$ represent addition.
$6 \infty 4=6+4=10$
So the question can be answered from data given in I alone.
From II: $5+0=5,5-0=5,5 \times 0 \neq 5$ and $5 \div 0 \neq 5$
So $\infty$ can be either addition or subtraction.
So the question cannot be answered from data given in II alone.
3. At what time did Poonam finish the job?
I. Poonam started working without a break on the job at exactly 9 a.m. and by noon she had utlised exactly half the time that it took her to finish the job.
II. Poonam took exactly 6 hours to finish the job.

## ANSWER: 1

From I: Poonam started the job at 9 a.m. and utlised half of the time by 12 p.m. Therefore she utilised 3 hours which is half of the allowed time.
$\Rightarrow$ Allowed time $=2 \times 3=6$ hours
Poonam can finish the job at 9 a.m. $+6=3$ p.m.
So the data given in I alone is sufficient to answer the question.
From II: At what time did Poonam start the work is not given. So the time at which she finishes cannot be found.

So data given in II alone is not sufficient to answer the question.
4. Last year an employee received an annual salary of Rs $6,18,000$, which was paid in equal pay cheques throughout the year. What was the salary received in each of the pay cheque
I. The employee received a total of 24 paycheques during the year.
II. The employee received a paycheque twice a month each month during the year.

ANSWER: 3
From I: The employee received Rs $6,18,000$ in 24 equal pay cheques. So salary
received in each pay cheque $=\frac{618000}{24}=25,750$
So data given in I alone are sufficient to answer the question.
From II: Employee received pay cheques twice a month during the year. So he received a total of $2 \times 12=24$ equal pay cheques.

Pay received in pay cheque $=\frac{618000}{24}=25,750$
Data in II alone are sufficient to answer the question.
5. Is the sum of integers $x$ and $y$ greater than 85 ?
I. The product of $x$ and $y$ is greater than 85 .
II. One of the variables is greater than 83.

ANSWER: 5
From I: $x \times y>85$
But $x$ and $y$ values cannot be found.
So the data given in statement $I$ is not sufficient to answer the question.
From II: One of the variable ( $\operatorname{say} x$ ) is greater than 83 . So it can take a minimum value of 84 but the other value ' $y$ ' cannot be found.

So the question cannot be answered by using data given in II alone.
Combining data given in I and II

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\begin{aligned}
& x \times \mathrm{y}>85 \text { and } x>83 \Rightarrow \mathrm{y}>\frac{85}{83} \\
& \therefore \mathrm{y} \geq 2 \\
& \Rightarrow x+y>83+2=85
\end{aligned}
$$

The data given in I and II together are sufficient to answer the question.
6. In how many days will five women complete a work?
I. Two women, five boys and three men together complete the work in eight days.
II. Six women complete the same work in sixteen days.

ANSWER: 2
From I: 2 women, 5 boys and 3 men together complete the work in 8 days. But the time taken by each person or each group cannot be found. So the time in which 5 women can complete the work cannot be found.
: The data given in statement I alone is not sufficient to answer the question.
From II: 6 women can complete the work in 16 days. So 5 women can complete the work in $\frac{6 \times 16}{5}=19.2$ days

The data given in statement II alone is sufficient to answer the question.
7. What is Sonu's monthly income?
I. Rita's monthly income is Rs 5000 more than Sonu's monthly income.
II. Sonu's monthly income is Rs 8000 more than Sohan's monthly income.

ANSWER: 4
From I: When difference of two values is given the two values cannot be found by using that relation.

So Sonu's salary cannot be found by using the given difference.

* Data in I alone is not sufficient to answer the question.

From II: As said in above statement, Sonu's salary cannot be found by using the given difference.

So data in II alone is not sufficient to answer the question.
Even by combining I and II Sonu's salary cannot be found.
8. What will be Pravin's age after 4 years?
I. The ratio between Pravin's and Shekar's present age is $2: 3$ respectively.
II. Shekar is six years older than Pravin.

ANSWER: 5
From I: Pravin's and Shekar's ages can be taken as $2 x$ and $3 x$ respectively.
But $x$ is an unknown. So Pravin's age after 4 years cannot be found.
So data given in I alone is not sufficient to answer the question.
From II: The difference between Sekhar's age and Pravin's age is 6 but their ages are unknown.

So data in II alone are not sufficient to answer the question.
Combining the data given in I and II
$3 x-2 x=6 \Rightarrow x=6$
. Pravin's present age $=2 \times 6=12$
. His age after 4 years $=12+4=16$
So data given in I and II together are sufficient to answer the question.
9. What is the area of a circle?
I. The radius of the circle is equal to length of a rectangle.
II. The breadth of the rectangle is equal to 22 cms .

ANSWER: 4
From I: The radius is an unknown. So area cannot be found.
: Data in I alone is not sufficient to answer the question.
From II: The radius of circle is an unknown. So area cannot be found.
. Data in II alone is not sufficient to answer the question.
Even by combining the data in I and II together the area cannot be found.
10. What is the average speed of a car?
I. Average speed of the car is four times average speed of a truck which covers 220 km in 11 hours.
II. Average speed of the truck is half the average speed of a train whereas the average speed of a jeep is $40 \mathrm{~km} / \mathrm{hr}$.

ANSWER: 1
From I: Average speed of truck $=\frac{220}{11}=20 \mathrm{kmph}$

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\Rightarrow \text { Average speed of car }=4 \times 20=80 \mathrm{kmph}
$$

So data given in I alone are sufficient to answer the question.
From II: Average speed of car cannot be found as nothing is given regarding the car.

Data in statement II alone are not sufficient to answer the question.
11. What is the two digit number?
I. Difference between the two digits of the number is 9 .
II. The sum of the two digits of the number is 9 .

ANSWER: 1
If ab is the two digit number then $\mathrm{a} \neq 0$.
From I: If the difference of two digits is 9 then one of them should be 9 and the other is

0 . But $\mathrm{a} \neq \mathrm{o} \Rightarrow \mathrm{a}=9$ and $\mathrm{b}=0$.
The two digit number is 90.
$\therefore$ Data in statement I alone are not sufficient to answer the question.
From II: $\mathrm{a}+\mathrm{b}=9$ but the values of a and b are unknowns. So the two digit number cannot be found.

So data in statement II alone are not sufficient to answer the question.
12. What is the speed of the boat?
I. The boat takes 4 hours to travel a distance of 12 km downstreams.
II. The boat takes 6 hours to travel a distance of 12 km in still water.

ANSWER: 2
From I: Downstream speed of boat (D) $=x+y=\frac{12}{4}=3 \mathrm{kmph}$
But $x$ value cannot be found from the above equation.
So data in statement I alone are not sufficient to answer the question.
From II: The speed of boat $(x)=\frac{12}{6}=2 \mathrm{kmph}$
: Data in statement II alone are sufficient to answer the question.
13. Is $S$ the mother of $M$ ?
I. $M$ is sister of $Q, Q$ is sister of $R$ and $R$ is daughter of $S$.
II. $M$ is daughter of $L$ and $L$ is sister of $V$.

ANSWER: 4

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From I: The gender of ' $S$ ' is not given. So one can't say how $S$ is related to any member.

* The data given in statement I alone are not sufficient to answer the question.

From II: Nothing is given regarding ' S '.
So data given in statement II alone are not sufficient to answer the question.
Even the combination of the data in I and II cannot establish the gender of ' $S$ '.
So data in both the statements I and II together are not sufficient to answer the question.


