

## Difficult Data Sufficiency Questions

### *WXYZ Remainder*

If  $w$ ,  $x$ ,  $y$ , and  $z$  are the digits of the four-digit number  $N$ , a positive integer, what is the remainder when  $N$  is divided by 9?

- 1)  $w + x + y + z = 13$
  - 2)  $N + 5$  is divisible by 9
- A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
D) EACH statement ALONE is sufficient.  
E) Statement (1) and (2) TOGETHER are NOT sufficient to answer the question asked, and additional data are needed.

[View Answer and Explanation](#)

#### *4 Powerful XYs*

If  $x$  and  $y$  are distinct positive integers, what is the value of  $x^4 - y^4$ ?

- 1)  $(y^2 + x^2)(y + x)(x - y) = 240$
  - 2)  $x^y = y^x$  and  $x > y$
- A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
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*Counting 9s*

If  $z = x^n - 19$ , is  $z$  divisible by 9?

- 1)  $x = 10$ ;  $n$  is a positive integer
  - 2)  $z + 981$  is a multiple of 9
- A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
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*Even Prime Addition Mystery*

$x$  is a positive integer; what is the value of  $x$ ?

- 1) The sum of any two positive factors of  $x$  is even
  - 2)  $x$  is a prime number and  $x < 4$
- 
- A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
  - B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
  - C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
  - D) EACH statement ALONE is sufficient.
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*X Mystery*

What is the value of  $x$ ?

- 1) The average (arithmetic mean) of 5,  $x^2$ , 2,  $10x$ , and 3 is -3
  - 2) The median of 109, -32, -30, 208, -15,  $x$ , 10, -43, 7 is -5
- A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
C) BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.  
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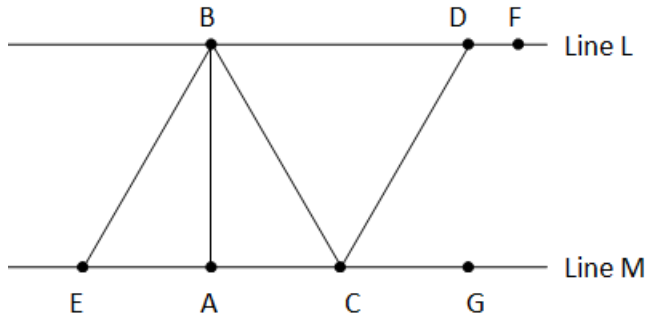
### *Indexing A Comparison*

In 2003, a then-nascent Internet search engine developed an indexing algorithm called G-Cache that retrieved and stored X million webpages per hour. At the same time, a competitor developed an indexing algorithm called HTML-Compress that indexed and stored Y million pages per hour. If both algorithms indexed a positive number of pages per hour, was the number of pages indexed per hour by G-Cache greater than three times the number of pages indexed by HTML-Compress?

- 1) On a per-hour basis in 2003, G-Cache indexed 1 million more pages than HTML-Compress indexed
  - 2) HTML-Compress can index between 400,000 and 1.4 million pages per hour
- A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
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*ABC Area*



If angle ABC is 30 degrees, what is the area of triangle BCE?

- 1) Angle CDF is 120 degrees, lines L and M are parallel, and  $AC = 6$ ,  $BC = 12$ , and  $EC = 2AC$
  - 2) Angle DCG is 60 degrees, angle CDG is 30 degrees, angle FDG = 90, and  $GC = 6$ ,  $CD = 12$  and  $EC = 12$
- A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
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### *X - Y Divisibility*

If both  $x$  and  $y$  are positive integers less than 100 and greater than 10, is the sum  $x + y$  a multiple of 11?

- 1)  $x - y$  is a multiple of 22
  - 2) The tens digit and the units digit of  $x$  are the same; the tens digit and the units digit of  $y$  are the same
- A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
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*XY Cubed Substitution*

If  $x$  and  $y$  are positive integers, is the following cube root an integer?

$$\sqrt[3]{x + y^2}$$

- 1)  $x = y^2(y-1)$
  - 2)  $x = 2$
- A) Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.  
B) Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.  
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*John's Parting Gift*

After a long career, John C. Walden is retiring. If there are 25 associates who contribute equally to a parting gift for John in an amount that is an integer, what is the total value of the parting gift?

- 1) If four associates were fired for underperformance, the total value of the parting gift would have decreased by \$200
  - 2) The value of the parting gift is greater than \$1,225 and less than \$1,275
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