

1. Running at the same constant rate, 6 identical machines can produce a total of 33 widgets per hour. At this rate, how many widgets could 14 such machines produce in 3 hours?

A) 66

B) 231

C) 462

D) 693

E) 909

2. A student's average (arithmetic mean) test score on 4 tests is 68. What must be the student's score on a 5th test for the student's average score on the 5 tests to be 70?

A) 70

B) 72

C) 74

D) 76

E) 78

3. During a certain season, a team won 80 percent of its first 80 games and 56 percent of its remaining games. If the team won  $\frac{1}{3}$  of its games in the entire season, what was the total number of games that the team played?

A) 180

B) 170

C) 156

D) 120

E) 105

4. Cyclist A averages 19.9 miles per hour and Cyclist B averages 15.1 miles per hour. If each cycle is ridden 1,500 miles, approximately how many more hours will Cyclist B ride than Cyclist A?

A) 18

B) 20

C) 25

- D) 30
- E) 36

5. During a particular period, water enters a partially filled reservoir at a constant rate through a mountain stream. At the same time, water is pumped out of the reservoir at a constant rate through an outlet pipe. At what rate, in gallons per minute, is the amount of water in the reservoir increasing?

- (1) The amount of water initially in the reservoir is 1800 gallons.
- (2) Water is pumped into the reservoir at a rate of 8 gallons per minute and out of the reservoir at a rate of 20 gallons every 3 minutes.
- 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) Statements (1) and (2) TOGETHER are NOT sufficient.

6.  $I$ , 17.2, 12.2, 7.2, 22.2 - What is the value of  $I$  in the list above?

- (1)  $I > 7.2$
- (2) The median of the numbers in the list is 14.7.
- 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) Statements (1) and (2) TOGETHER are NOT sufficient.

7. If  $m$  is an integer, is  $m$  odd?

- (1)  $1 + m^2$  is an odd integer.
- (2)  $5m - 2$  is an even integer.

- ☐ Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.

- ☐ Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
- ☐ BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
- ☐ EACH statement ALONE is sufficient.
- ☐ Statements (1) and (2) TOGETHER are NOT sufficient.

8. A company offered a training program to all of its 120 employees. How many employees completed the training?

(1) Of all employees, 30 percent completed more than half of the training.

(2) Of all employees, 30 percent of those who began the training completed it.

- ☐ Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.
- ☐ Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.
- ☐ BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.
- ☐ EACH statement ALONE is sufficient.
- ☐ Statements (1) and (2) TOGETHER are NOT sufficient.

9. In a class of 120 students numbered 1 to 120, all even numbered students opt for Physics, those whose numbers are divisible by 5 opt for Chemistry and those whose numbers are divisible by 7 opt for Math. How many opt for none of the three subjects?

- A. 19
- B. 41
- C. 21
- D. 57
- E. 26

10. Of the 200 candidates who were interviewed for a position at a call center, 100 had a two-wheeler, 70 had a credit card and 140 had a mobile phone. 40 of them had both, a two-wheeler and a credit card, 30 had both, a credit card and a mobile phone and 60 had both, a two wheeler and mobile phone and 10 had all three. How many candidates had none of the three?

- A. 0
- B. 20
- C. 10
- D. 18
- E. 25

**11. In a class of 40 students, 12 enrolled for both English and German. 22 enrolled for German. If the students of the class enrolled for at least one of the two subjects, then how many students enrolled for only English and not German?**

- A. 30
- B. 10
- C. 18
- D. 28
- E. 32

**12. In a class 40% of the students enrolled for Math and 70% enrolled for Economics. If 15% of the students enrolled for both Math and Economics, what % of the students of the class did not enroll for either of the two subjects?**

- A. 5%
- B. 15%
- C. 0%
- D. 25%
- E. None of these

**13. If both  $11^2$  and  $3^3$  are factors of the number  $a * 4^3 * 6^2 * 13^{11}$ , then what is the smallest possible value of 'a'?**

- A. 121
- B. 3267
- C. 363
- D. 33
- E. None of the above

**14. How many different positive integers exist between  $10^6$  and  $10^7$ , the sum of whose digits is equal to 2?**

- A. 6
- B. 7
- C. 5
- D. 8
- E. 18

**15. A number when divided by a divisor leaves a remainder of 24. When twice the original number is divided by the same divisor, the remainder is 11. What is the value of the divisor?**

- A. 13
- B. 59
- C. 35
- D. 37
- E. 12

**16. How many keystrokes are needed to type numbers from 1 to 1000?**

- A. 3001
- B. 2893
- C. 2704
- D. 2890
- E. None of these

**17. When 242 is divided by a certain divisor the remainder obtained is 8.**

**When 698 is divided by the same divisor the remainder obtained is 9.**

**However, when the sum of the two numbers 242 and 698 is divided by the divisor, the remainder obtained is 4. What is the value of the divisor?**

- A. 11
- B. 17
- C. 13

- D. 23
- E. None of these

18. **How many integral divisors does the number 120 have?**

- A. 14
- B. 16
- C. 12
- D. 20
- E. None of these

19. **How many trailing zeros will be there after the rightmost non-zero digit in the value of  $25!$ ?**

- A. 25
- B. 8
- C. 6
- D. 5
- E. 2

20. **What is the remainder when  $1044 * 1047 * 1050 * 1053$  is divided by 33?**

- A. 3
- B. 27
- C. 30
- D. 21
- E. 18

21. **Data Sufficiency: Is  $x^3 > x^2$ ?**

- 1.  $x > 0$
- 2.  $x < 1$

- 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) Statements (1) and (2) TOGETHER are NOT sufficient.

**22. Data Sufficiency: Is  $xyxy$  a terminating decimal?**

- 1.  $x$  is a multiple of 2
- 2.  $y$  is a multiple of 3

- 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) Statements (1) and (2) TOGETHER are NOT sufficient.

**23. Data Sufficiency: Is the positive integer  $X$  divisible by 21?**

- 1. When  $X$  is divided by 14, the remainder is 4
- 2. When  $X$  is divided by 15, the remainder 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.
- D) EACH statement ALONE is sufficient.
- E) Statements (1) and (2) TOGETHER are NOT sufficient.

**24. Data Sufficiency: If  $x$  and  $y$  are positive integers, is  $y$  odd?**

1.  $x$  is odd.

2.  $xy$  is odd.

- 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) Statements (1) and (2) TOGETHER are NOT sufficient.

25. **Data Sufficiency**: Is  $xy < 0$ ?

1.  $5|x| + |y| = 0$

2.  $|x| + 5|y| = 0$

- 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) Statements (1) and (2) TOGETHER are NOT sufficient.

26. **Data Sufficiency**: When a positive integer ' $x$ ' is divided by a divisor ' $d$ ', the remainder is 24. What is  $d$ ?

1. When  $2x$  is divided by  $d$ , the remainder is 23.

2. When  $3x$  is divided by  $d$ , the remainder is 22.

- 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) Statements (1) and (2) TOGETHER are NOT sufficient.

27. **Data Sufficiency**: How many of the numbers  $x$ ,  $y$ , and  $z$  are positive if each of these numbers is less than 10?

1.  $x + y + z = 20$

2.  $x + y = 14$

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) Statements (1) and (2) TOGETHER are NOT sufficient.

28. What is the sum of all 3 digit numbers that leave a remainder of '2' when divided by 3?

A. 897

B. 164,850

C. 164,749

D. 149,700

E. 156,720

29. How many 3 digit positive integers exist that when divided by 7 leave a remainder of 5?

A. 128

B. 142

C. 143

- D. 141
- E. 129

**30. The average of 5 consecutive integers starting with  $m$  as the first integer is  $n$ . What is the average of 9 consecutive integers that start with  $(m + 2)$ ?**

- A.  $m + 4$
- B.  $n + 6$
- C.  $n + 3$
- D.  $m + 5$
- E.  $n + 4$

**31. The sum of the fourth and twelfth term of an arithmetic progression is 20. What is the sum of the first 15 terms of the arithmetic progression?**

- A. 300
- B. 120
- C. 150
- D. 170
- E. 270