MATH GWD 14

1.

Of the land owned by a farmer, 90 percent was cleared for planting. Of the cleared land, 40 percent was planted with soybeans and 50 percent of the cleared land was planted with wheat. If the remaining 720 acres of cleared land was planted with corn, how many acres did the farmer own?

(A)5,832 (B)6,480 (C)7,200 (D)8,000 (E)8,889

2.

Does the decimal equivalent of $\frac{p}{q}$, where p and q are positive integers, contain only a finite number of nonzero digits?

- (1) p > q
- (2) q = 8

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.

3.

At an auction, each of the bids on a certain clock after the first bid was \$100 greater than the immediately preceding bid. What was the amount of the last bid on the clock?

(1) The first bid on the clock was \$450.

(2) The fourth bid on the clock was \$300 less than the amount of the last bid.

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.

4.

In a recent election, Ms. Robbins received 8,000 votes cast by independent voters, that is, voters not registered with a specific political party. She also received 10 percent of the votes cast by those voters registered with a political party. If *N* is the total number of votes cast in the election and 40 percent of the votes cast were cast by independent voters, which of the following represents the number of votes that Ms. Robbins received?

(A) 0.06N + 3,200 (B) 0.1N + 7,200 (C) 0.4N + 7,200 (D) 0.1N + 8,000 (E) 0.06N + 8,000

5. If |m + 4| = 2, what is the value of *m*? (1) m < 0

(2) $m^2 + 8m + 12 = 0$

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.

6. If $x^2 = 4$ and $y^2 = 7$, then $x^6 - y^4 =$

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(A)33 (B) 25 (C) 15 (D) -3 (E) -33
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7.

If p, s, and t are positive prime numbers, what is the value of $p^3s^3t^3$?

(1) $p^3 st = 728$

(2) t = 13

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.

8.

If x and y are integers, what is the value of $2x^{6y} - 4$?

- (1) $x^{2y} = 16$
- (2) xy = 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.

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

9.

The function f is defined for each positive three-digit integer n by $f(n) = 2^x 3^y 5^z$, where x, y and z are the hundreds, tens, and units digits of n, respectively. If m and v are three-digit positive integers such that f(m) = 9 f(v), then m - v =

(A) 8 (B) 9 (C) 18 (D) 20 (E) 80

10. If N = $\frac{1}{3} + \frac{1}{3^2} + \frac{1}{3^3}$, then *N* is between

(A) 0 and $\frac{1}{9}$ (B) $\frac{1}{9}$ and $\frac{1}{3}$ (C) $\frac{1}{3}$ and $\frac{8}{9}$ (D) $\frac{8}{9}$ and $\frac{4}{3}$ (E) $\frac{4}{3}$ and 2

11. Is x < 0? (1) $x^3 < x^2$ (2) $x^3 < x^4$

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.

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

12.

A rectangular floor that measures 8 meters by 10 meters is to be covered with carpet squares that each measure 2 meters by 2 meters. If the carpet squares cost \$12 apiece, what is the total cost for the number of carpet squares needed to cover the floor?

(A)\$200 (B)\$240 (C)\$480 (D)\$960 (E)\$1,920

13.

Each of 20 parents chose one of five days from Monday through Friday to attend parent-teacher conferences. If more parents chose Monday than Tuesday, did at least one of the parents choose Friday?

- (1) None of the five days was chosen by more than 5 parents.
- (2) More parents chose Monday than Wednesday.

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.

A certain pilot flew 400 miles to City K at an average speed of 350 miles per hour with the wind and made the trip back at an average speed of 250 miles per hour against the wind. Which of the following is closest to the pilot's average speed, in miles per hour, for the round-trip?

(A)280 (B)290 (C)300 (D)310 (E)320

15.

If 2, x, y, and z are different positive integers whose average (arithmetic mean) is 10, what is the greatest possible value of z ?

(A)10 (B)24 (C)34 (D)36 (E)40

16.

Which of the following is closest to $10^{180} - 10^{30}$?

(A) 10^{210} (B) 10^{180} (C) 10^{150} (D) 10^{90} (E) 10^{6}

17.

If x, y, and z are consecutive even positive integers, which of the following could be equal to x + y + z?

(A)141 (B)200 (C)318 (D)391 (E)412

18.

Last year in a group of 30 businesses, 21 reported a net profit and 15 had investments in foreign markets. How many of the businesses did not report a net profit nor invest in foreign markets last year?

(1) Last year 12 of the 30 businesses reported a net profit and had investments in foreign markets.

(2) Last year 24 of the 30 businesses reported a net profit or invested in foreign markets, or both.

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.

19. If - 2x > 3y, is x negative? (1) y > 0

(2) 2x + 5y - 20 = 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.

20.

The positive numbers w, x, y, and z are such that x is 20 percent greater than y, y is 20 percent greater than z, and w is 20 percent less than x. What percent greater than z is w ?

(A)15.2% (B)16.0% (C)20.0% (D)23.2% (E)24.8%

21.

Machine *M* processes a certain chemical product at a constant rate. Does machine *M* process the product at a rate that is greater than 25 grams per second? (1 kilogram = 1,000 grams)

(1) Machine *M* processes the product at a rate that is greater than 92 kilograms per hour.

(2) Machine *M* processes the product at a rate that is less than 95 kilograms per hour.

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. Is -7 < y < 10? (1) y > -6(2) 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.

Jacob purchased 100 boxes of oranges at \$8.00 per box. He sold 8 of the boxes at \$4.00 per box to Company A, and he sold the rest of the boxes at x dollars per box to Company B. If Jacob's profit from the purchase and sale of the 100 boxes of oranges was \$336.00, at what price per box did he sell the boxes to Company B?

(A)\$11.36 (B)\$11.60 (C)\$12.00 (D)\$12.35 (E)\$12.90

24.

A sum of money was divided between John and Anne such that the ratio of John's share to Anne's share was 5 to 3. If John's share exceeded $\frac{5}{9}$ of the sum of money by \$50, what was Anne's share?

(A)\$180 (B)\$270 (C)\$340 (D)\$450 (E)\$720

25.

From May 1 to May 30 in the same year, the balance in a checking account increased. What was the balance in the checking account on May 30? (1) If, during this period of time, the increase in the balance in the checking account had been 12 percent, then the balance in the account on May 30 would have been \$504.

(2) During this period of time, the increase in the balance in the checking account was 8 percent.

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.

What is the probability that event *E* or event *F* or both will occur?

- (1) The probability that event *E* will occur is 0.6.
- (2) The probability that event *F* will occur is 0.4.

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.

If the probability is 0.54 that Stock A will increase in value during the next month and the probability is 0.68 that Stock B will increase in value during the next month, what is the greatest possible value for the probability that neither of these two events will occur?

(A)0.22 (B)0.32 (C)0.37 (D)0.46 (E)0.63

28.

If Diana's stamp collection, $\frac{4}{5}$ of the stamps are Canadian, and $\frac{3}{7}$ of the Canadian stamps were issued before 1940. If 192 stamps in Diana's collection are Canadian stamps that were issued in 1940 or later, how many stamps in her collection are <u>not</u> Canadian?

(A)84 (B)88 (C)96 (D)104 (E)112

29.

For a certain car repair, the total charge consisted of a charge for parts, a charge for labor, and a 6 percent sales tax on both the charge for parts and the charge for labor. If the charge for parts, excluding sales tax, was \$50.00, what was the total charge for the repair?

- (1) The sales tax on the charge for labor was \$9.60.
- (2) The total sales tax was \$12.60.

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.

30.

If x and y are integers, is y an even integer?

(1) $2y - x = x^2 - y^2$

(2) x is an odd integer.

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.

For any number x, [x] denotes the greatest integer less than or equal to x. What is the value of $\left|-\frac{10}{4}\right|$?

(A) 0 (B) -1 (C) -2 (D) -3 (E) -4



答案 DBCEE/ CAADC/ CBABC/ BCDDA/ ACCBC/ EBADA/ D

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