

## Practice Test #1 Data Sufficiency (218 Questions)

1. 86-!-item-!-187;#058&000002

A garden store purchased a number of shovels and a number of rakes. If the cost of each shovel was \$14 and the cost of each rake was \$9, what was the total cost of the shovels and rakes purchased by the store?

- (1) The ratio of the number of shovels to the number of rakes purchased by the store was 2 to 3.
- (2) The total number of shovels and rakes purchased by the store was 50.

2. 142-!-item-!-187;#058&000140

Of the students who eat in a certain cafeteria, each student either likes or dislikes lima beans and each student either likes or dislikes brussels sprouts. Of these students,  $\frac{2}{3}$  dislike lima beans; and of those who dislike lima beans,  $\frac{3}{5}$  also dislike brussels sprouts. How many of the students like brussels sprouts but dislike lima beans?

- (1) 120 students eat in the cafeteria.
- (2) 40 of the students like lima beans.

3. 196-!-item-!-187;#058&000141

How many different prime numbers are factors of the positive integer  $n$  ?

- (1) Four different prime numbers are factors of  $2n$ .
- (2) Four different prime numbers are factors of  $n^2$ .

4. 250-!-item-!-187;#058&000160

Is the product of a certain pair of integers even?

- (1) The sum of the integers is odd.
- (2) One of the integers is even and the other is odd.

5. 304-!-item-!-187;#058&000163

If  $k$  is an integer and  $2 < k < 8$ , what is the value of  $k$  ?

- (1)  $k$  is a factor of 30.
- (2)  $k$  is a factor of 12.

6. 363-!-item-!-187;#058&000183



On the number line above, is the product of  $w$ ,  $x$ ,  $y$ , and  $z$  negative?

- (1)  $z$  is positive.
- (2) The product of  $w$  and  $x$  is positive.

7. 509-!-item-!-187;#058&000355

If  $y$  and  $z$  are integers, is  $y(z + 1)$  odd?

- (1)  $y$  is odd
- (2)  $z$  is even.

8. 563-!-item-!-187;#058&000364

If  $n$  and  $m$  are positive integers, what is the remainder when  $3^{(4n + 2 + m)}$  is divided by 10 ?

(1)  $n = 2$

(2)  $m = 1$

9. 617-!-item-!-187;#058&000483

If  $x$  is a positive integer, is  $x < 16$  ?

(1)  $x$  is less than the average (arithmetic mean) of the first ten positive integers.

(2)  $x$  is the square of an integer.

10. 719-!-item-!-187;#058&000515

Of the 800 students at a certain college, 250 students live on campus and are more than 20 years old. How many of the

800 students live on campus and are 20 years old or less?

(1) 640 students at the college are more than 20 years old.

(2) 60 students at the college are 20 years old or less and live off campus.

11. 959-!-item-!-187;#058&000583

If  $p$  is a positive odd integer, what is the remainder when  $p$  is divided by 4 ?

(1) When  $p$  is divided by 8, the remainder is 5.

(2)  $p$  is the sum of the squares of two positive integers.

12. 1013-!-item-!-187;#058&000609

Of the 25 cars sold at a certain dealership yesterday, some had automatic transmission and some had antilock brakes. How many of the cars had automatic transmission but not antilock brakes?

(1) All of the cars that had antilock brakes also had automatic transmission.

(2) 2 of the cars had neither automatic transmission nor antilock brakes.

13. 1067-!-item-!-187;#058&000618

Is  $x$  to the right of  $-5$  on the number line?

(1)  $x$  is to the right of  $-7$  on the number line.

(2)  $x$  is between  $-4$  and  $-3$  on the number line.

14. 1121-!-item-!-187;#058&000619

Is  $y$  between  $-2$  and  $1$  on the number line?

(1)  $y$  is to the right of  $-1$  on the number line.

(2)  $y$  is to the left of  $2$  on the number line.

15. 1175-!-item-!-187;#058&000621

Is  $r$  to the right of  $-6$  on the number line?

(1)  $r$  is between  $-4$  and  $-1$  on the number line.

(2)  $r$  is between  $-3$  and  $1$  on the number line.

16. 1275-!-item-!-187;#058&000656

Lines  $n$  and  $p$  lie in the  $xy$ -plane. Is the slope of line  $n$  less than the slope of line  $p$  ?

(1) Lines  $n$  and  $p$  intersect at the point  $(5,1)$ .

(2) The y-intercept of line n is greater than the y-intercept of line p.

17. 1329-!-item-!-187;#058&000662

Six countries in a certain region sent a total of 75 representatives to an international congress, and no two countries sent the same number of representatives. Of the six countries, if Country A sent the second greatest number of representatives, did Country A send at least 10 representatives?

(1) One of the six countries sent 41 representatives to the congress.

(2) Country A sent fewer than 12 representatives to the congress.

18. 1383-!-item-!-187;#058&000675

What is the hundredths digit of the decimal z ?

(1) The tenths digit of 100z is 2.

(2) The units digit of 1,000z is 2.

19. 1437-!-item-!-187;#058&000677

Is z equal to the median of the three positive integers x, y, and z ?

(1)  $x < y + z$

(2)  $y = z$

20. 1491-!-item-!-187;#058&000755

A certain one-day seminar consisted of a morning session and an afternoon session. If each of the 128 people attending the seminar attended at least one of the two sessions, how many of the people attended the morning session only?

(1)  $\frac{3}{4}$  of the people attended both sessions.

(2)  $\frac{7}{8}$  of the people attended the afternoon session.

21. 1545-!-item-!-187;#058&000766

If a certain charity collected a total of 360 books, videos, and board games, how many videos did the charity collect?

(1) The number of books that the charity collected was 40 percent of the total number of books, videos, and board games that the charity collected.

(2) The number of books that charity collected was  $66\frac{2}{3}$  percent of the total number of videos and board games that charity collected.

22. 1599-!-item-!-187;#058&000810

Of the 800 sweaters at a certain store, 150 are red. How many of the red sweaters at the store are made of pure wool?

(1) 320 of the sweaters at the store are neither red nor made of pure wool.

(2) 100 of the red sweaters at the store are not made of pure wool.

23. 1653-!-item-!-187;#058&000843

At least 100 students at a certain high school study Japanese. If 4 percent of the students at the school who study French also study Japanese, do more students at the school study French than Japanese?

(1) 16 students at the school study both French and Japanese.

(2) 10 percent of the students at the school who study Japanese also study French.

24. 1952-!-item-!-187;#058&002488

At a certain restaurant, if each hamburger costs the same amount, what is the cost, excluding sales tax, of 1 hamburger?

- (1) The total cost, including a 6 percent sales tax, is \$4.77 for 3 hamburgers.
- (2) The total cost, including a 6 percent sales tax, is less than \$6.50 for 4 hamburgers.

25. 2055-!-item-!-187;#058&002563

What is the value of  $n$  ?

- (1)  $n$  is between 0 and 1.
- (2)  $\frac{7}{16}$  is  $\frac{3}{8}$  more than  $n$ .

26. 2109-!-item-!-187;#058&002567

In a certain conference room each row of chairs has the same number of chairs, and the number of rows is 1 less than the number of chairs in a row. How many chairs are in a row?

- (1) There is a total of 72 chairs.
- (2) After 1 chair is removed from the last row, there is a total of 17 chairs in the last 2 rows.

27. 2260-!-item-!-187;#058&002626

What is the price for a certain meal listed on a menu?

- (1) The total paid for the meal, sales tax, and gratuity is \$10.84.
- (2) The sales tax on food is 6 percent.

28. 2365-!-item-!-187;#058&002728

Which of Company X and Company Y earned the greater gross profit last year?

- (1) Last year the expenses of Company X were  $\frac{5}{6}$  of the expenses of Company Y.
- (2) Last year the revenues of Company X were \$6 million less than the revenues of Company Y.

29. 2517-!-item-!-187;#058&002771

What is the value of  $6x - 10$  ?

- (1)  $3x - 5 = 16$
- (2)  $12x - 10 = 74$

30. 2663-!-item-!-187;#058&002855

Is  $w$  greater than 1 ?

- (1)  $w + 2 > 0$
- (2)  $w^2 > 1$

31. 2764-!-item-!-187;#058&002889

At a refreshment stand, each can of soda sells for the same price and each sandwich sells for the same price. What is the total price for 2 sandwiches and 3 cans of soda at the stand?

- (1) At the stand the total price for 1 sandwich and 1 can of soda is \$3.
- (2) At the stand the total price for 3 sandwiches and 2 cans of soda is \$8.

32. 2818-!-item-!-187;#058&002974

Al, Pablo, and Marsha shared the driving on a 1,500-mile trip. Which of the three drove the greatest distance on the trip?

- (1) Al drove 1 hour longer than Pablo but at an average rate of 5 miles per hour slower than Pablo.

(2) Marsha drove 9 hours and averaged 50 miles per hour.

33. 2873-!-item-!-187;#058&002998

If  $x = \frac{1}{2}$ , is  $y$  equal to 1 ?

(1)  $y^2 (x + \frac{1}{2}) = 1$

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

34. 2927-!-item-!-187;#058&003024

During an experiment, some water was removed from each of 6 water tanks. If the standard deviation of the volumes of water in the tanks at the beginning of the experiment was 10 gallons, what was the standard deviation of the volumes of water in the tanks at the end of the experiment?

(1) For each tank, 30 percent of the volume of water that was in the tank at the beginning of the experiment was removed during the experiment.

(2) The average (arithmetic mean) volume of water in the tanks at the end of the experiment was 63 gallons.

35. 3076-!-item-!-187;#058&003114

If  $p$  and  $n$  are positive integers and  $p > n$ , what is the remainder when  $p^2 - n^2$  is divided by 15 ?

(1) The remainder when  $p + n$  is divided by 5 is 1.

(2) The remainder when  $p - n$  is divided by 3 is 1.

36. 3130-!-item-!-187;#058&003116

If  $x$  is positive, is  $x > 3$  ?

(1)  $(x - 1)^2 > 4$

(2)  $(x - 2)^2 > 9$

37. 3184-!-item-!-187;#058&003224

When 1,000 children were inoculated with a certain vaccine, some developed inflammation at the site of the inoculation and some developed fever. How many of the children developed inflammation but not fever?

(1) 880 children developed neither inflammation nor fever.

(2) 20 children developed fever.

38. 3481-!-item-!-187;#058&003324

If  $r$  and  $s$  are positive integers, is  $\frac{r}{s}$  an integer?

(1) Every factor of  $s$  is also a factor of  $r$ .

(2) Every prime factor of  $s$  is also a prime factor of  $r$ .

39. 3582-!-item-!-187;#058&003470

For the students in class A, the range of their heights is  $r$  centimeters and the greatest height is  $g$  centimeters. For the students in class B, the range of their heights is  $s$  centimeters and the greatest height is  $h$  centimeters. Is the least height of the students in class A greater than the least height of the students in class B ?

(1)  $r < s$

(2)  $g > h$

40. 3636-!-item-!-187;#058&003488

Beth's bank charges a service fee on a regular checking account for each month in which the balance on the account falls

below \$100 at any time during the month. Did the bank charge a service fee on Beth's regular checking account last month?

- (1) During last month, a total of \$1,000 was withdrawn from Beth's regular checking account.
- (2) At the beginning of last month, Beth's regular checking account balance was \$500.

41. 3690-!-item-!-187;#058&003497

Machines X and Y work at their respective constant rates. How many more hours does it take machine Y, working alone, to fill a production order of a certain size than it takes machine X, working alone?

- (1) Machines X and Y, working together, fill a production order of this size in two-thirds the time that machine X, working alone, does.
- (2) Machine Y, working alone, fills a production order of this size in twice the time that machine X, working alone, does.

42. 3744-!-item-!-187;#058&003565

John and Mary own shares of stock in a certain company. Does John own more shares of the company's stock than Mary?

- (1) Mary owns more than 500 shares of the company's stock.
- (2) The number of shares of the company's stock that John owns is 400 less than twice the number of shares of the company's stock that Mary owns.

43. 3798-!-item-!-187;#058&003572

Each person in a certain group supports only one of the two candidates R and T. Of the people in the group, 45 percent support Candidate R and the rest support Candidate T. How many people in the group are in favor of a flat tax?

- (1) Of the people in the group who support Candidate R, 58 percent are in favor of a flat tax.
- (2) Of the people in the group who support Candidate T, 22 are in favor of a flat tax.

44. 3852-!-item-!-187;#058&003578

In the  $xy$ -plane, at what two points does the graph of  $y = (x + a)(x + b)$  intersect the  $x$ -axis?

- (1)  $a + b = -1$
- (2) The graph intersects the  $y$ -axis at  $(0, -6)$ .

45. 3906-!-item-!-187;#058&003579

How many of the 42 people in a group are employed students?

- (1) 29 of the 42 people are employed.
- (2) 24 of the 42 people are students.

46. 3960-!-item-!-187;#058&003582

How many hours did it take Helen to drive from her house to her parents' house?

- (1) Helen's average speed on this trip was 72 kilometers per hour.
- (2) If Helen's average speed on this trip had been 8 kilometers per hour greater, it would have taken her 1 hour less.

47. 4068-!-item-!-187;#058&003673

Is  $m \neq n$ ?

- (1)  $m + n < 0$
- (2)  $mn < 0$

48. 4122-!-item-!-187;#058&003746

Last Friday each of the pets at a certain veterinary clinic was given either 1 treat or 2 treats. What was the total number of

treats given to pets at the clinic last Friday?

- (1) The total number of pets at the clinic last Friday was 90.
- (2)  $\frac{2}{3}$  of the pets at the clinic last Friday were given 2 treats each.

49. 4176-!-item-!-187;#058&003769  
Does  $x + y = 5$  ?

- (1)  $4x + y = 17$
- (2)  $x + 4y = 8$

50. 4230-!-item-!-187;#058&003784

A construction company was paid a total of \$500,000 for a construction project. The company's only costs for the project were for labor and materials. Was the company's profit for the project greater than \$150,000 ?

- (1) The company's total cost was three times its cost for materials.
- (2) The company's profit was greater than its cost for labor.

51. 4284-!-item-!-187;#058&003822

What is the total value of Company H's stock?

- (1) Investor P owns  $\frac{1}{4}$  of the shares of Company H's total stock.
- (2) The total value of Investor Q's shares of Company H's stock is \$16,000.

52. 4338-!-item-!-187;#058&003827

If the average (arithmetic mean) of four different numbers is 30, how many of the numbers are greater than 30 ?

- (1) None of the four numbers is greater than 60.
- (2) Two of the four numbers are 9 and 10, respectively.

53. 4392-!-item-!-187;#058&003851

If  $wx = y$ , what is the value of  $xy$  ?

- (1)  $wx^2 = 16$
- (2)  $y = 4$

54. 4538-!-item-!-187;#058&004024

Is  $x - y + 1$  greater than  $x + y - 1$  ?

- (1)  $x > 0$
- (2)  $y < 0$

55. 4687-!-item-!-187;#058&004202

Malik's recipe for 4 servings of a certain dish requires  $1\frac{1}{2}$  cups of pasta. According to this recipe, what is the number of cups of pasta that Malik will use the next time he prepares this dish?

- (1) The next time he prepares this dish, Malik will make half as many servings as he did the last time he prepared the dish.
- (2) Malik used 6 cups of pasta the last time he prepared this dish.

56. 4741-!-item-!-187;#058&004206

During a sale, a clothing store sold each shirt at a price of \$15 and each sweater at a price of \$25. Did the store sell more

sweaters than shirts during the sale?

(1) The average (arithmetic mean) of the prices of all of the shirts and sweaters that the store sold during the sale was \$21.

(2) The total of the prices of all of the shirts and sweaters that the store sold during the sale was \$420.

57. 4795-!-item-!-187;#058&004223

During a sale, for each shirt that Mark purchased at the regular price, he also purchased a shirt at half the regular price. How many shirts did Mark purchase during the sale?

(1) The regular price of each of the shirts that Mark purchased during the sale was \$21.50.

(2) The total of the prices for all the shirts that Mark purchased during the sale was \$129.00.

58. 4895-!-item-!-187;#058&004290

What is the remainder when the positive integer  $x$  is divided by 3 ?

(1) When  $x$  is divided by 6, the remainder is 2.

(2) When  $x$  is divided by 15, the remainder is 2.

59. 4950-!-item-!-187;#058&004329

Ann deposited money into two new accounts, A and B. Account A earns 5 percent simple annual interest and account B earns 8 percent simple annual interest. If there were no other transactions in the two accounts, then the amount of interest that account B earned in the first year was how many dollars greater than the amount of interest that account A earned in the first year?

(1) Ann deposited \$200 more in account B than in account A.

(2) The total amount of interest that the two accounts earned in the first year was \$120.

60. 5054-!-item-!-187;#058&004422

What was the percent increase in the population of City K from 1980 to 1990 ?

(1) In 1970 the population of City K was 160,000

(2) In 1980 the population of City K was 20 percent greater than it was in 1970, and in 1990 the population of City K was 30 percent greater than it was in 1970.

61. 5157-!-item-!-187;#058&004472

Of the 60 animals on a certain farm,  $\frac{2}{3}$  are either pigs or cows. How many of the animals are cows?

(1) The farm has more than twice as many cows as it has pigs.

(2) The farm has more than 12 pigs.

62. 5212-!-item-!-187;#058&004501

In isosceles  $\triangle RST$  what is the measure of  $\angle R$

(1) The measure of  $\angle T$  is  $100^\circ$ .

(2) The measure of  $\angle S$  is  $40^\circ$ .

63. 5266-!-item-!-187;#058&004544

The cost of delivery for an order of desk chairs was \$10.00 for the first chair, and \$1.00 for each additional chair in the order. If an office manager placed an order for  $n$  desk chairs, is  $n > 24$  ?

(1) The delivery cost for the order totaled more than \$30.00.

(2) The average (arithmetic mean) delivery cost per chair of the  $n$  chairs was \$1.36.

64. 5320-!-item-!-187;#058&004563

Are at least 10 percent of the people in Country X who are 65 years old or older employed?

(1) In Country X, 11.3 percent of the population is 65 years old or older.

(2) In Country X, of the population 65 years old or older, 20 percent of the men and 10 percent of the women are employed.

65. 5374-!-item-!-187;#058&004565

If  $x$  is a positive number less than 10, is  $z$  greater than the average (arithmetic mean) of  $x$  and 10 ?

(1) On the number line,  $z$  is closer to 10 than it is to  $x$ .

(2)  $z = 5x$

66. 5428-!-item-!-187;#058&004588

In the finite sequence of positive integers  $K_1, K_2, K_3, \dots, K_9$ , each term after the second is the sum of the two terms immediately preceding it. If  $K_5 = 18$ , what is the value of  $K_9$  ?

(1)  $K_4 = 11$

(2)  $K_6 = 29$

67. 5482-!-item-!-187;#058&004634

Is  $x + y$  negative?

(1)  $x$  is negative.

(2)  $y$  is positive.

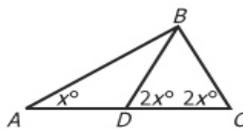
68. 5536-!-item-!-187;#058&004638

What is the tens digit of the positive integer  $r$  ?

(1) The tens digit of  $\frac{r}{10}$  is 3.

(2) The hundreds digit of  $10r$  is 6.

69. 5825-!-item-!-187;#058&004737



In triangle ABC above, what is the length of side BC ?

(1) Line segment AD has length 6.

(2)  $x = 36$

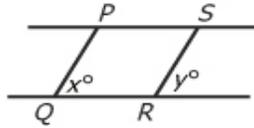
70. 6067-!-item-!-187;#058&004849

Is the integer  $x$  divisible by 6 ?

(1)  $x + 3$  is divisible by 3.

(2)  $x + 3$  is an odd number.

71. 6125-!-item-!-187;#058&004856



In the figure above, if  $x$  and  $y$  are each less than  $90$  and  $PS \parallel QR$  is the length of segment  $PQ$  less than the length of segment  $SR$  ?

- (1)  $x > y$
- (2)  $x + y > 90$

72. 6179-!-item-!-187;#058&004900

A bookstore that sells used books sells each of its paperback books for a certain price and each of its hardcover books for a certain price. If Joe, Maria, and Paul bought books in this store, how much did Maria pay for 1 paperback book and 1 hardcover book?

- (1) Joe bought 2 paperback books and 3 hardcover books for \$12.50.
- (2) Paul bought 4 paperback books and 6 hardcover books for \$25.00.

73. 6279-!-item-!-187;#058&004943

What is the average (arithmetic mean) of eleven consecutive integers?

- (1) The average of the first nine integers is 7.
- (2) The average of the last nine integers is 9.

74. 6333-!-item-!-187;#058&004944

If  $x$  and  $y$  are integers, what is the value of  $x + y$  ?

- (1)  $690 < x < y < 696$
- (2)  $692 < x < y < 695$

75. 6387-!-item-!-187;#058&004958

Is  $x$  less than 20 ?

- (1) The sum of  $x$  and  $y$  is less than 20.
- (2)  $y$  is less than 20.

76. 6441-!-item-!-187;#058&005031

Is the integer  $k$  divisible by 4 ?

- (1)  $8k$  is divisible by 16.
- (2)  $9k$  is divisible by 12.

77. 6741-!-item-!-187;#058&005163

If  $n$  is an integer between 10 and 99, is  $n < 80$  ?

- (1) The sum of the two digits of  $n$  is a prime number.
- (2) Each of the two digits of  $n$  is a prime number.

78. 6841-!-item-!-187;#058&005248

For each customer, a bakery charges  $p$  dollars for the first loaf of bread bought by the customer and charges  $q$  dollars for each additional loaf bought by the customer. What is the value of  $p$  ?

- (1) A customer who buys 2 loaves is charged 10 percent less per loaf than a customer who buys a single loaf.
- (2) A customer who buys 6 loaves of bread is charged 10 dollars.

79. 6946-!-item-!-187;#058&005390

If the terms of a sequence are  $t_1, t_2, t_3, \dots, t_n$ , what is the value of  $n$  ?

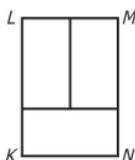
- (1) The sum of the  $n$  terms is 3,124.
- (2) The average (arithmetic mean) of the  $n$  terms is 4.

80. 7243-!-item-!-187;#058&005480

If  $x$  is a negative number, what is the value of  $x$  ?

- (1)  $x^2 = 1$
- (2)  $x^2 + 3x + 2 = 0$

81. 7301-!-item-!-187;#058&005482



In the figure above, what is the ratio  $\frac{KN}{MN}$  ?

- (1) The perimeter of rectangle KLMN is 30 meters.
- (2) The three small rectangles have the same dimensions.

82. 7356-!-item-!-187;#058&005489

Is  $|x| > |y|$  ?

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

83. 7463-!-item-!-187;#058&005565

If  $u, v$ , and  $w$  are integers, is  $u > 0$  ?

- (1)  $u = v^2 + 1$
- (2)  $u = w^4 + 1$

84. 7517-!-item-!-187;#058&005572

If  $p$  is a prime number greater than 2, what is the value of  $p$  ?

- (1) There are a total of 100 prime numbers between 1 and  $p + 1$ .
- (2) There are a total of  $p$  prime numbers between 1 and 3,912.

85. 7713-!-item-!-187;#058&005641

Is  $k$  positive?

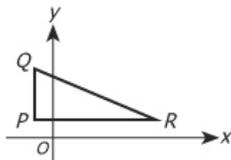
- (1)  $k$  is between -2 and 3 on the number line.
- (2)  $k$  is between 1 and 2 on the number line.

86. 7767-!-item-!-187;#058&005660

Each of the students in a certain class received a single grade of P, F, or I. What percent of the students in the class were females?

- (1) Of those who received a P, 40 percent were females.
- (2) Of those who received either an F or I, 80 percent were males.

87. 7824-!-item-!-187;#058&005664



In the figure above, segments PQ and PR are each parallel to one of the rectangular coordinate axes. What is the sum of the coordinates of point P ?

- (1) The x-coordinate of point Q is -1.
- (2) The y-coordinate of point R is 1.

88. 8066-!-item-!-187;#058&005745

What is the greatest common divisor of positive integers m and n ?

- (1) m is a prime number.
- (2)  $2n = 7m$

89. 8212-!-item-!-187;#058&005846

What is the retail price of a certain calculator?

- (1) The retail price of the calculator is \$2.00 more than the wholesale price.
- (2) The retail price of the calculator is 50 percent more than the \$4.00 wholesale price.

90. 8266-!-item-!-187;#058&005947

On Jane's credit card account, the average daily balance for a 30-day billing cycle is the average (arithmetic mean) of the daily balances at the end of each of the 30 days. At the beginning of a certain 30-day billing cycle, Jane's credit card account had a balance of \$600. Jane made a payment of \$300 on the account during the billing cycle. If no other amounts were added to or subtracted from the account during the billing cycle, what was the average daily balance on Jane's account for the billing cycle?

- (1) Jane's payment was credited on the 21st day of the billing cycle.
- (2) The average daily balance through the 25th day of the billing cycle was \$540.

91. 8417-!-item-!-187;#058&005991

What is the remainder when the positive integer n is divided by 6 ?

- (1) n is a multiple of 5.
- (2) n is a multiple of 12.

92. 8471-!-item-!-187;#058&005997

Is the integer r divisible by 3 ?

- (1) r is the product of 4 consecutive positive integers.
- (2)  $r < 25$

93. 8525-!-item-!-187;#058&006006  
If the integer  $n$  is greater than 1, is  $n$  equal to 2 ?

- (1)  $n$  has exactly two positive factors.
- (2) The difference of any two distinct positive factors of  $n$  is odd.

94. 8579-!-item-!-187;#058&006012  
What is the value of  $y$  ?

- (1)  $y$  is an odd integer between 28 and 34.
- (2)  $31 < y < 36$

95. 8634-!-item-!-187;#058&006039

Is  $\frac{1}{a-b} < b - a$  ?

- (1)  $a < b$ .
- (2)  $1 < |a - b|$ .

96. 8688-!-item-!-187;#058&006049

If  $x$  and  $y$  are integers greater than 1, is  $x$  a multiple of  $y$  ?

- (1)  $3y^2 + 7y = x$ .
- (2)  $x^2 - x$  is a multiple of  $y$ .

97. 8745-!-item-!-187;#058&006054

Is  $\sqrt{(x-3)^2} = 3 - x$

- (1)  $x \neq 3$
- (2)  $-x|x| > 0$

98. 8799-!-item-!-187;#058&006082  
What is the value of  $5x^2 + 4x - 1$  ?

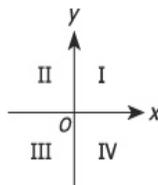
- (1)  $x(x + 2) = 0$
- (2)  $x = 0$

99. 9270-!-item-!-187;#058&006322

If  $m > 0$  and  $n > 0$ , is  $\frac{m+x}{n+x} > \frac{m}{n}$  ?

- (1)  $m < n$
- (2)  $x > 0$

100. 9327-!-item-!-187;#058&006480



In the rectangular coordinate system shown above, does the line  $k$  (not shown) intersect quadrant II ?

(1) The slope of  $k$  is  $-\frac{1}{6}$

(2) The  $y$ -intercept of  $k$  is  $-6$ .

101. 9432-!-item-!-187;#058&006634

If the sum of three different numbers is 54, what is the largest number?

(1) The largest number is twice the smallest number.

(2) The sum of the two smaller numbers is 30.

102. 9486-!-item-!-187;#058&006637

If  $M$  is a finite set of negative integers, is the total number of integers in  $M$  an odd number?

(1) The product of all the integers in  $M$  is odd.

(2) The product of all the integers in  $M$  is negative.

103. 9540-!-item-!-187;#058&006638

A certain bag contains red, blue, and green marbles. What is the ratio of the number of green marbles to the number of red marbles in the bag?

(1) The number of blue marbles in the bag is 2 times the number of green marbles in the bag.

(2) The number of blue marbles in the bag is 3 times the number of red marbles in the bag.

104. 9643-!-item-!-187;#058&006681

What is the value of  $x$  ?

(1)  $y - x = y - 6$

(2)  $x + 2y = 10$

105. 9789-!-item-!-187;#058&006817

What is the number of members of Club X who are at least 35 years of age?

(1) Exactly  $\frac{3}{4}$  of the members of Club X are under 35 years of age.

(2) The 64 women in Club X constitute 40 percent of the club's membership.

106. 9843-!-item-!-187;#058&006850

What was Jean's insurance premium in 1995 ?

(1) The ratio of Jean's insurance premium in 1995 to her insurance premium in 1994 was  $\frac{6}{5}$ .

(2) Jean's insurance premium in 1995 was 20 percent more than her insurance premium in 1994.

107. 9897-!-item-!-187;#058&006904

A combined total of 55 lightbulbs are stored in two boxes; of these, a total of 7 are broken. If there are exactly 2 broken bulbs in the first box, what is the number of bulbs in the second box that are not broken?

(1) In the first box, the number of bulbs that are not broken is 15 times the number of broken bulbs.

(2) The total number of bulbs in the first box is 9 more than the total number of bulbs in the second box.

108. 10385-!-item-!-187;#058&007204

Three friends rented a car for a week and divided the cost equally. What was the total cost of renting the car?

(1) If the three friends had kept the car for a second week, they could have obtained the two-week rate, which was 1.5 times the cost of a one-week rental.

(2) If a fourth friend had joined the three friends and the cost had been divided equally among the four friends, the cost to each of the original three would have been reduced by \$15.

109. 10439-!-item-!-187;#058&007237

If  $R = 1 + 2xy + x^2y^2$ , what is the value of  $xy$  ?

(1)  $R = 0$

(2)  $x > 0$

110. 10493-!-item-!-187;#058&007240

If  $z^n = 1$ , what is the value of  $z$  ?

(1)  $n$  is a nonzero integer.

(2)  $z > 0$

111. 10884-!-item-!-187;#058&007442

If  $x$ ,  $y$ , and  $z$  are positive integers, what is the remainder when  $100x + 10y + z$  is divided by 7 ?

(1)  $y = 6$

(2)  $z = 3$

112. 11176-!-item-!-187;#058&007606

Each person attending a fund-raising party for a certain club was charged the same admission fee. How many people attended the party?

(1) If the admission fee had been \$0.75 less and 100 more people had attended, the club would have received the same amount in admission fees.

(2) If the admission fee had been \$1.50 more and 100 fewer people had attended, the club would have received the same amount in admission fees.

113. 11760-!-item-!-187;#058&007855

For a certain set of  $n$  numbers, where  $n > 1$ , is the average (arithmetic mean) equal to the median?

(1) If the  $n$  numbers in the set are listed in increasing order, then the difference between any pair of successive numbers in the set is 2.

(2) The range of the  $n$  numbers in the set is  $2(n - 1)$ .

114. 11816-!-item-!-187;#058&007868

Henry purchased 3 items during a sale. He received a 20 percent discount off the regular price of the most expensive item and a 10 percent discount off the regular price of each of the other 2 items. Was the total amount of the 3 discounts greater than 15 percent of the sum of the regular prices of the 3 items?

(1) The regular price of the most expensive item was \$50, and the regular price of the next most expensive item was \$20.

(2) The regular price of the least expensive item was \$15.

115. 11870-!-item-!-187;#058&007880

If  $xy = -18$ , is  $x$  less than  $y$  ?

(1)  $x < 0$

(2)  $y < 10$

116. 11924-!-item-!-187;#058&007881

An insurance company has a contract with a medical laboratory to pay a discounted price for a certain medical test performed on patients referred to the laboratory by the insurance company. If the laboratory's original bill for this medical test on a patient referred by the insurance company is \$230, what is the percent discount specified by the contract between the laboratory and the insurance company?

- (1) The insurance company is required to pay only 20 percent of the original bill for the test.
- (2) The insurance company is required to pay \$46 for the test.

117. 11978-!-item-!-187;#058&007947

If P, Q, and R are points on the number line, what is the distance between P and R ?

- (1) Q is between P and R.
- (2) The distance between P and Q is 5.

118. 12032-!-item-!-187;#058&007948

If x is positive, what is the value of y ?

- (1)  $5x = 15$
- (2)  $xy + y = 18$

119. 12086-!-item-!-187;#058&008079

A contractor combined x tons of a gravel mixture that contained 10 percent gravel G, by weight, with y tons of a mixture that contained 2 percent gravel G, by weight, to produce z tons of a mixture that was 5 percent gravel G, by weight. What is the value of x ?

- (1)  $y = 10$
- (2)  $z = 16$

120. 12140-!-item-!-187;#058&008146

How many of the students in a certain class are taking both a history and a science course?

- (1) Of all the students in the class, 50 are taking a history course.
- (2) Of all the students in the class, 70 are taking a science course.

121. 12194-!-item-!-187;#058&008148

Pat bought 5 pounds of apples. How many pounds of pears could Pat have bought for the same amount of money?

- (1) One pound of pears costs \$0.50 more than one pound of apples.
- (2) One pound of pears costs  $1\frac{1}{2}$  times as much as one pound of apples.

122. 12343-!-item-!-187;#058&008383

During a 40-mile trip, Marla traveled at an average speed of x miles per hour for the first y miles of the trip and at an average speed of  $1.25x$  miles per hour for the last  $40 - y$  miles of the trip. The time that Marla took to travel the 40 miles was what percent of the time it would have taken her if she had traveled at an average speed of x miles per hour for the entire trip?

- (1)  $x = 48$
- (2)  $y = 20$

123. 12586-!-item-!-187;#058&008871

If integer p is greater than 1, is p a prime number?

(1)  $p$  is odd.

(2) The only positive factors of  $p$  are 1 and  $p$ .

124. 12829-!-item-!-187;#058&008976

A certain company divides its total advertising budget into television, radio, newspaper, and magazine budgets in the ratio of 8 : 7 : 3 : 2, respectively. How many dollars are in the radio budget?

(1) The television budget is \$18,750 more than the newspaper budget.

(2) The magazine budget is \$7,500.

125. 12932-!-item-!-187;#058&009020

The sequence  $a_1, a_2, a_3, \dots, a_n$  of  $n$  integers is such that  $a_k = k$  if  $k$  is odd and  $a_k = -a_{k-1}$  if  $k$  is even. Is the sum of the terms in the sequence positive?

(1)  $n$  is odd.

(2)  $a_n$  is positive.

126. 13035-!-item-!-187;#058&009047

$S$  is a finite set of numbers. Does  $S$  contain more negative numbers than positive numbers?

(1) The product of all the numbers in  $S$  is  $-1,200$ .

(2) There are 6 numbers in  $S$ .

127. 13089-!-item-!-187;#058&009187

On the number line, if the number  $k$  is to the left of the number  $t$ , is the product  $kt$  to the right of  $t$ ?

(1)  $t < 0$

(2)  $k < 1$

128. 13143-!-item-!-187;#058&009201

The points  $A, B, C,$  and  $D$  are on a number line, not necessarily in that order. If the distance between  $A$  and  $B$  is 18 and the distance between  $C$  and  $D$  is 8, what is the distance between  $B$  and  $D$ ?

(1) The distance between  $C$  and  $A$  is the same as the distance between  $C$  and  $B$ .

(2)  $A$  is to the left of  $D$  on the number line.

129. 13198-!-item-!-187;#058&009205

Is  $\frac{x+1}{x-3} < 0$ ?

(1)  $-1 < x < 1$

(2)  $x^2 - 4 < 0$

130. 13252-!-item-!-187;#058&009207

In the sequence of positive numbers  $x_1, x_2, x_3, \dots$ , what is the value of  $x_1$ ?

(1)  $x_i = \frac{x_{i-1}}{2}$  for all integers  $i > 1$

(2)  $x_5 = \frac{x_4}{x_4+1}$

131. 13306-!-item-!-187;#058&009213

The positive integer  $k$  has exactly two positive prime factors, 3 and 7. If  $k$  has a total of 6 positive factors, including 1 and  $k$ ,

what is the value of  $k$  ?

(1)  $3^2$  is a factor of  $k$ .

(2)  $7^2$  is not a factor of  $k$ .

132. 13360-!-item-!-187;#058&009215

If  $l$  and  $k$  are lines in the  $xy$ -plane, is the product of the slopes of  $l$  and  $k$  equal to  $-1$  ?

(1) Line  $l$  passes through the origin and the point  $(1, 2)$ .

(2) Line  $k$  has  $x$ -intercept  $4$  and  $y$ -intercept  $2$ .

133. 13609-!-item-!-187;#058&009567

At a certain company, the average (arithmetic mean) number of years of experience is  $9.8$  years for the male employees and  $9.1$  years for the female employees. What is the ratio of the number of the company's male employees to the number of the company's female employees?

(1) There are  $52$  male employees at the company.

(2) The average number of years of experience for the company's male and female employees combined is  $9.3$  years.

134. 13755-!-item-!-187;#058&009724

An attorney charged a fee for estate planning services for a certain estate. The attorney's fee was what percent of the assessed value of the estate?

(1) The assessed value of the estate was  $\$1.2$  million.

(2) The attorney charged  $\$2,400$  for the estate planning services.

135. 13860-!-item-!-187;#058&009754

During a one-day sale, a store sold each sweater of a certain type for  $\$30$  more than the store's cost to purchase each sweater. How many of these sweaters were sold during the sale?

(1) During the sale, the total revenue from the sale of these sweaters was  $\$270$ .

(2) During the sale, the store sold each of these sweaters at a price that was  $50$  percent greater than the store's cost to purchase each sweater.

136. 13960-!-item-!-187;#058&009782

An integer greater than  $1$  that is not prime is called composite. If the two-digit integer  $n$  is greater than  $20$ , is  $n$  composite?

(1) The tens digit of  $n$  is a factor of the units digit of  $n$ .

(2) The tens digit of  $n$  is  $2$ .

137. 14062-!-item-!-187;#058&009802

If  $x$  is an integer, is  $(x^2 + 1)(x + 5)$  an even number?

(1)  $x$  is an odd number.

(2) Each prime factor of  $x^2$  is greater than  $7$ .

138. 14162-!-item-!-187;#058&009822

A certain theater has a total of  $884$  seats, of which  $500$  are orchestra seats and the rest are balcony seats. When tickets for all the seats in the theater are sold, the total revenue from ticket sales is  $\$34,600$ . What was the theater's total revenue from ticket sales for last night's performance?

(1) The price of an orchestra seat ticket is twice the price of a balcony seat ticket.

(2) For last night's performance, tickets for all the balcony seats were sold, but only  $80$  percent of the tickets for the orchestra seats were sold.

139. 14263-!-item-!-187;#058&009908

If it took Carlos  $\frac{1}{2}$  hour to cycle from his house to the library yesterday, was the distance that he cycled greater than 6 miles? (Note: 1 mile = 5,280 feet)

- (1) The average speed at which Carlos cycled from his house to the library yesterday was greater than 16 feet per second.
- (2) The average speed at which Carlos cycled from his house to the library yesterday was less than 18 feet per second.

140. 14319-!-item-!-187;#058&009938

At a certain pet shop,  $\frac{1}{3}$  of the pets are dogs and  $\frac{1}{5}$  of the pets are birds. How many of the pets are dogs?

- (1) There are 30 birds at the pet shop.
- (2) There are 20 more dogs than birds at the pet shop.

141. 14373-!-item-!-187;#058&009939

To fill an order on schedule, a manufacturer had to produce 1,000 tools per day for  $n$  days. What is the value of  $n$ ?

- (1) Because of production problems, the manufacturer produced only 600 tools per day during the first 5 days.
- (2) Because of production problems, the manufacturer had to produce 1,500 tools per day on each of the last 4 days in order to meet the schedule.

142. 14473-!-item-!-187;#058&010003

If  $x$  is a positive integer, what is the least common multiple of  $x$ , 6, and 9?

- (1) The least common multiple of  $x$  and 6 is 30.
- (2) The least common multiple of  $x$  and 9 is 45.

143. 14534-!-item-!-187;#058&010011



In the figure shown, the measure of angle PRS is how many degrees greater than the measure of angle PQR?

- (1) The measure of angle QPR is  $30^\circ$
- (2) The sum of the measures of angles PQR and PRQ is  $150^\circ$

144. 14635-!-item-!-187;#058&010061

If \$1,000 is deposited in a certain bank account and remains in the account along with any accumulated interest, the dollar amount of interest,  $I$ , earned by the deposit in the first  $n$  years is given by the formula  $I = 1000 \left[ \left( 1 + \frac{r}{100} \right)^n - 1 \right]$ , where  $r$  percent is the annual interest rate paid by the bank. Is the annual interest rate paid by the bank greater than 8 percent?

- (1) The deposit earns a total of \$210 in interest in the first two years.
- (2)  $\left( 1 + \frac{r}{100} \right)^2 > 1.15$

145. 14689-!-item-!-187;#058&010088

On her way home from work, Janet drives through several tollbooths. Is there a pair of these tollbooths that are less than 10 miles apart?

- (1) The first tollbooth and the last tollbooth are 25 miles apart.
- (2) Janet drives through 4 tollbooths on her way home from work.

146. 14746-!-item-!-187;#058&010097

If the symbol  $\triangle$  represents either addition or multiplication, which operation does it represent?

- (1)  $a \triangle b = b \triangle a$  for all numbers  $a$  and  $b$ .
- (2)  $a \triangle (b - c) = (a \triangle b) - (a \triangle c)$  for all numbers  $a$ ,  $b$ , and  $c$ .

147. 14800-!-item-!-187;#058&010134

Each employee on a certain task force is either a manager or a director. What percent of the employees on the task force are directors?

- (1) The average (arithmetic mean) salary of the managers on the task force is \$5,000 less than the average salary of all employees on the task force.
- (2) The average (arithmetic mean) salary of the directors on the task force is \$15,000 greater than the average salary of all employees on the task force.

148. 14854-!-item-!-187;#058&010192

In the  $xy$ -plane, does the line with equation  $y = 3x + 2$  contain the point  $(r, s)$  ?

- (1)  $(3r + 2 - s)(4r + 9 - s) = 0$
- (2)  $(4r - 6 - s)(3r + 2 - s) = 0$

149. 14908-!-item-!-187;#058&010196

If  $m$ ,  $r$ ,  $x$ , and  $y$  are positive, is the ratio of  $m$  to  $r$  equal to the ratio of  $x$  to  $y$  ?

- (1) The ratio of  $m$  to  $y$  is equal to the ratio of  $x$  to  $r$ .
- (2) The ratio of  $m + x$  to  $r + y$  is equal to the ratio of  $x$  to  $y$ .

150. 15103-!-item-!-187;#058&010253

If  $a$ ,  $b$ ,  $k$ , and  $m$  are positive integers, is  $a^k$  a factor of  $b^m$  ?

- (1)  $a$  is a factor of  $b$ .
- (2)  $k \leq m$

151. 15157-!-item-!-187;#058&010256

Is  $x > 0.05$  ?

- (1)  $x > \frac{3}{40}$
- (2)  $x$  is greater than 3 percent of 50.

152. 15303-!-item-!-187;#058&010299

If  $xyz > 0$ , is  $x > 0$  ?

- (1)  $xy > 0$
- (2)  $xz > 0$

153. 15354-!-item-!-187;#058&010304

A wooden rod is cut into two pieces. What is the length of the longer piece?

- (1) One of the pieces is 20 inches longer than the other piece.
- (2) The length of the shorter piece is  $\frac{1}{3}$  the length of the longer piece.

154. 15408-!-item-!-187;#058&010332

The sum of positive integers  $x$  and  $y$  is 77. What is the value of  $xy$  ?

- (1)  $x = y + 1$
- (2)  $x$  and  $y$  have the same tens digit.

155. 15462-!-item-!-187;#058&010358

Did it take Pei more than 2 hours to walk a distance of 10 miles along a certain trail? (1 mile = 1.6 kilometers, rounded to the nearest tenth.)

- (1) Pei walked this distance at an average rate of less than 6.4 kilometers per hour.
- (2) On average, it took Pei more than 9 minutes per kilometer to walk this distance.

156. 15516-!-item-!-187;#058&010359

A store sells milk in cartons of two sizes, one-half gallon and one-quarter gallon. If the store sold a total of 300 cartons of milk yesterday, how many gallons of milk did it sell yesterday?

- (1) Yesterday the store sold 120 one-quarter-gallon cartons of milk.
- (2) Yesterday the store sold 90 gallons of milk in one-half-gallon cartons.

157. 15663-!-item-!-187;#058&010465

If  $n$  is a positive integer and  $r$  is the remainder when  $4 + 7n$  is divided by 3, what is the value of  $r$  ?

- (1)  $n + 1$  is divisible by 3.
- (2)  $n > 20$

158. 15810-!-item-!-187;#058&010518

Each of the 25 balls in a certain box is either red, blue, or white and has a number from 1 to 10 painted on it. If one ball is to be selected at random from the box, what is the probability that the ball selected will either be white or have an even number painted on it?

- (1) The probability that the ball will both be white and have an even number painted on it is 0.
- (2) The probability that the ball will be white minus the probability that the ball will have an even number painted on it is 0.2.

159. 15957-!-item-!-187;#058&010660

If  $n$  is a positive integer and  $r$  is the remainder when  $(n - 1)(n + 1)$  is divided by 24, what is the value of  $r$  ?

- (1)  $n$  is not divisible by 2.
- (2)  $n$  is not divisible by 3.

160. 16057-!-item-!-187;#058&010664

If Company M ordered a total of 50 computers and printers and Company N ordered a total of 60 computers and printers, how many computers did Company M order?

- (1) Company M and Company N ordered the same number of computers.
- (2) Company N ordered 10 more printers than Company M.

161. 16203-!-item-!-187;#058&010722

If the average (arithmetic mean) of the five numbers  $x$ , 7, 2, 16, and 11 is equal to the median of the five numbers, what is the value of  $x$  ?

(1)  $7 < x < 11$

(2)  $x$  is the median of the five numbers.

162. 16257-!-item-!-187;#058&010730

What fraction of this year's graduating students at a certain college are males?

(1) Of this year's graduating students, 33 percent of the males and 20 percent of the females transferred from another college.

(2) Of this year's graduating students, 25 percent transferred from another college.

163. 16312-!-item-!-187;#058&010731

Linda put an amount of money into each of two new investments, A and B, that pay simple annual interest. If the annual interest rate of investment B is 1.5 times that of investment A, what amount did Linda put into investment A ?

(1) The interest for 1 year is \$50 for investment A and \$150 for investment B.

(2) The amount that Linda put into investment B is twice the amount that she put into investment A.

164. 16412-!-item-!-187;#058&010774

At a two-day seminar, 90 percent of those registered attended the seminar on the first day. What percent of those registered did not attend the seminar on either day?

(1) A total of 1,000 people registered for the two-day seminar.

(2) Of those registered, 80 percent attended the seminar on the second day.

165. 16466-!-item-!-187;#058&010795

Of the 1,400 college teachers surveyed, 42 percent said that they considered engaging in research an essential goal. How many of the college teachers surveyed were women?

(1) In the survey, 36 percent of the men and 50 percent of the women said that they considered engaging in research an essential goal.

(2) In the survey, 288 men said that they considered engaging in research an essential goal.

166. 16522-!-item-!-187;#058&010838

In the  $xy$ -coordinate plane, the slope of line  $l$  is  $\frac{3}{4}$ . Does line  $l$  pass through the point  $(-\frac{2}{3}, \frac{1}{2})$ ?

(1) Line  $l$  passes through the point (4,4).

(2) Line  $l$  passes through the point (-4,-2).

167. 16626-!-item-!-187;#058&010859

If  $x$ ,  $y$ , and  $z$  are integers and  $xy + z$  is an odd integer, is  $x$  an even integer?

(1)  $xy + xz$  is an even integer.

(2)  $y + xz$  is an odd integer.

168. 16680-!-item-!-187;#058&010861

On the number line, the distance between  $x$  and  $y$  is greater than the distance between  $x$  and  $z$ . Does  $z$  lie between  $x$  and  $y$  on the number line?

(1)  $xyz < 0$

(2)  $xy < 0$

169. 16735-!-item-!-187;#058&010875

If the integers  $a$  and  $n$  are greater than 1 and the product of the first 8 positive integers is a multiple of  $a^n$ , what is the value of  $a$  ?

(1)  $a^n = 64$

(2)  $n = 6$

170. 16927-!-item-!-187;#058&010946

If  $n$  and  $t$  are positive integers, what is the greatest prime factor of the product  $nt$  ?

(1) The greatest common factor of  $n$  and  $t$  is 5.

(2) The least common multiple of  $n$  and  $t$  is 105.

171. 16981-!-item-!-187;#058&010960

Is  $|x - y| > |x| - |y|$  ?

(1)  $y < x$

(2)  $xy < 0$

172. 17130-!-item-!-187;#058&011022

If  $m$ ,  $k$ ,  $x$ , and  $y$  are positive numbers, is  $mx + ky > kx + my$  ?

(1)  $m > k$

(2)  $x > y$

173. 17281-!-item-!-187;#058&011070

If  $N$  is a positive integer, is the units digit of  $N$  equal to zero?

(1) 14 and 35 are factors of  $N$ .

(2)  $N = (2^5)(3^2)(5^7)(7^6)$

174. 17336-!-item-!-187;#058&011114

In the  $xy$ -plane, what is the  $y$ -intercept of line  $l$  ?

(1) The slope of line  $l$  is 3 times its  $y$ -intercept.

(2) The  $x$ -intercept of line  $l$  is  $-\frac{1}{3}$ .

175. 17390-!-item-!-187;#058&011123

The sum of the integers in list  $S$  is the same as the sum of the integers in list  $T$ . Does  $S$  contain more integers than  $T$  ?

(1) The average (arithmetic mean) of the integers in  $S$  is less than the average of the integers in  $T$ .

(2) The median of the integers in  $S$  is greater than the median of the integers in  $T$ .

176. 17491-!-item-!-187;#058&011140

If  $x$  and  $y$  are positive integers, is the product  $xy$  even?

(1)  $5x - 4y$  is even.

(2)  $6x + 7y$  is even.

177. 17595-!-item-!-187;#058&011159

If  $x$  and  $y$  are positive integers, what is the value of  $xy$  ?

- (1) The greatest common factor of  $x$  and  $y$  is 10.
- (2) The least common multiple of  $x$  and  $y$  is 180.

178. 17649-!-item-!-187;#058&0111292

If there are more than two numbers in a certain list, is each of the numbers in the list equal to 0 ?

- (1) The product of any two numbers in the list is equal to 0.
- (2) The sum of any two numbers in the list is equal to 0.

179. 17750-!-item-!-187;#058&011285

A manufacturer conducted a survey to determine how many people buy products P and Q. What fraction of the people surveyed said that they buy neither product P nor product Q ?

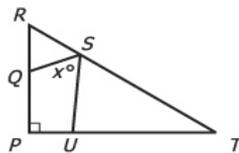
- (1)  $\frac{1}{3}$  of the people surveyed said that they buy product P but not product Q.
- (2)  $\frac{1}{2}$  of the people surveyed said that they buy product Q.

180. 17851-!-item-!-187;#058&011342

Are  $x$  and  $y$  both positive?

- (1)  $2x - 2y = 1$
- (2)  $\frac{x}{y} > 1$

181. 17908-!-item-!-187;#058&011358



In the figure shown, what is the value of  $x$  ?

- (1) The length of line segment QR is equal to the length of line segment RS.
- (2) The length of line segment ST is equal to the length of line segment TU.

182. 17963-!-item-!-187;#058&011379

In a certain year, the difference between Mary's and Jim's annual salaries was twice the difference between Mary's and Kate's annual salaries. If Mary's annual salary was the highest of the 3 people, what was the average (arithmetic mean) annual salary of the 3 people that year?

- (1) Jim's annual salary was \$30,000 that year.
- (2) Kate's annual salary was \$40,000 that year.

183. 18017-!-item-!-187;#058&011390

The positive integers  $x$ ,  $y$ , and  $z$  are such that  $x$  is a factor of  $y$  and  $y$  is a factor of  $z$ . Is  $z$  even?

- (1)  $xz$  is even.
- (2)  $y$  is even.

184. 18071-!-item-!-187;#058&011405

Jack and Mark both received hourly wage increases of 6 percent. After the wage increases, Jack's hourly wage was how many dollars per hour more than Mark's?

- (1) Before the wage increases, Jack's hourly wage was \$5.00 per hour more than Mark's.
- (2) Before the wage increases, the ratio of Jack's hourly wage to Mark's hourly wage was 4 to 3.

185. 18511-!-item-!-187;#058&011604

Is  $x$  between 0 and 1 ?

- (1)  $x$  is between  $-\frac{1}{2}$  and  $\frac{3}{2}$
- (2)  $\frac{3}{4}$  is  $\frac{1}{4}$  more than  $x$ .

186. 18566-!-item-!-187;#058&011610

If  $0 < x < y$ , what is the value of  $\frac{(x+y)^2}{(x-y)^2}$  ?

- (1)  $x^2 + y^2 = 3xy$
- (2)  $xy = 3$

187. 18620-!-item-!-187;#058&011611

If  $x$ ,  $y$ , and  $z$  are integers greater than 1, what is the value of  $x + y + z$  ?

- (1)  $xyz = 70$
- (2)  $\frac{x}{yz} = \frac{7}{10}$

188. 18674-!-item-!-187;#058&011626

Is  $p + pz = p$  ?

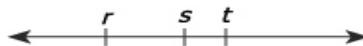
- (1)  $p = 0$
- (2)  $z = 0$

189. 18728-!-item-!-187;#058&011689

If the operation  $\triangle$  is one of the four arithmetic operations addition, subtraction, multiplication, and division, is  $(6 \triangle 2) \triangle 4 = 6 \triangle (2 \triangle 4)$  ?

- (1)  $3 \triangle 2 > 3$
- (2)  $3 \triangle 1 = 3$

190. 18785-!-item-!-187;#058&011838



On the number line shown, is zero halfway between  $r$  and  $s$  ?

- (1)  $s$  is to the right of zero.
- (2) The distance between  $t$  and  $r$  is the same as the distance between  $t$  and  $-s$ .

191. 18839-!-item-!-187;#058&011851

If the product of the three digits of the positive integer  $k$  is 14, what is the value of  $k$  ?

- (1)  $k$  is an odd integer.

(2)  $k < 700$

192. 18939-!-item-!-187;#058&011984

Of the 75 houses in a certain community, 48 have a patio. How many of the houses in the community have a swimming pool?

(1) 38 of the houses in the community have a patio but do not have a swimming pool.

(2) The number of houses in the community that have a patio and a swimming pool is equal to the number of houses in the community that have neither a swimming pool nor a patio.

193. 18993-!-item-!-187;#058&012050

The attendees at a certain convention purchased a total of 15,000 books. How many of these attendees were female?

(1) There was a total of 4,000 attendees at the convention.

(2) The male attendees purchased an average (arithmetic mean) of 3 books each, and the female attendees purchased an average of 5 books each.

194. 19047-!-item-!-187;#058&012065

If  $x$  and  $y$  are positive integers, what is the value of  $x + y$  ?

(1)  $2^x 3^y = 72$

(2)  $2^x 2^y = 32$

195. 19101-!-item-!-187;#058&012103

What is the value of  $h$  ?

(1)  $h^2 = 36$

(2)  $h^2 + 12h = -36$

196. 19155-!-item-!-187;#058&012165

How many odd integers are greater than the integer  $x$  and less than the integer  $y$  ?

(1) There are 12 even integers greater than  $x$  and less than  $y$ .

(2) There are 24 integers greater than  $x$  and less than  $y$ .

197. 19209-!-item-!-187;#058&012193

Jason's salary and Karen's salary were each  $p$  percent greater in 1998 than in 1995. What is the value of  $p$  ?

(1) In 1995 Karen's salary was \$2,000 greater than Jason's.

(2) In 1998 Karen's salary was \$2,440 greater than Jason's.

198. 19263-!-item-!-187;#058&012213

Did one of the 3 members of a certain team sell at least 2 raffle tickets yesterday?

(1) The 3 members sold a total of 6 raffle tickets yesterday.

(2) No 2 of the members sold the same number of raffle tickets yesterday.

199. 19366-!-item-!-187;#058&012225

If  $s$  and  $t$  are two different numbers on the number line, is  $s + t$  equal to 0 ?

(1) The distance between  $s$  and 0 is the same as the distance between  $t$  and 0.

(2) 0 is between  $s$  and  $t$ .

200. 19420-!-item-!-187;#058&012241

Of the 1,000 companies responding to a certain survey, what percent indicated that they had a business recovery plan?

- (1) 200 of the companies did not indicate that they had a business recovery plan.
- (2) The number of companies that indicated that they had a business recovery plan was 4 times the number that did not indicate that they had a business recovery plan.

201. 19474-!-item-!-187;#058&012274

Martha bought an armchair and a coffee table at an auction and sold both items at her store. Her gross profit from the purchase and sale of the armchair was what percent greater than her gross profit from the purchase and sale of the coffee table?

- (1) Martha paid 10 percent more for the armchair than for the coffee table.
- (2) Martha sold the armchair for 20 percent more than she sold the coffee table.

202. 19528-!-item-!-187;#058&012279

Each employee of Company Z is an employee of either Division X or Division Y, but not both. If each division has some part-time employees, is the ratio of the number of full-time employees to the number of part-time employees greater for Division X than for Company Z ?

- (1) The ratio of the number of full-time employees to the number of part-time employees is less for Division Y than for Company Z.
- (2) More than half of the full-time employees of Company Z are employees of Division X, and more than half of the part-time employees of Company Z are employees of Division Y.

203. 19582-!-item-!-187;#058&012370

What is the remainder when the positive integer  $x$  is divided by 6?

- (1) When  $x$  is divided by 2, the remainder is 1; and when  $x$  is divided by 3, the remainder is 0.
- (2) When  $x$  is divided by 12, the remainder is 3.

204. 19682-!-item-!-187;#058&012407

On a certain sight-seeing tour, the ratio of the number of women to the number of children was 5 to 2. What was the number of men on the sight-seeing tour?

- (1) On the sight-seeing tour, the ratio of the number of children to the number of men was 5 to 11.
- (2) The number of women on the sight-seeing tour was less than 30.

205. 19736-!-item-!-187;#058&012415

Ellen can purchase a certain computer at a local store at the price of  $p$  dollars and pay a 6 percent sales tax. Alternatively, Ellen can purchase the same computer from a catalog for a total of  $q$  dollars, including all taxes and shipping costs. Will it cost more for Ellen to purchase the computer from the local store than from the catalog?

- (1)  $q - p < 50$
- (2)  $q = 1,150$

206. 19977-!-item-!-187;#058&012599

If  $p$  is a positive integer, what is the value of  $p$  ?

- (1)  $\frac{p}{4}$  is a prime number.
- (2)  $p$  is divisible by 3.

207. 20123-!-item-!-187;#058&012633

Is  $y < 2x$  ?

(1)  $\frac{y}{4} < \frac{x}{2}$

(2)  $\frac{y-2x}{3} < 0$

208. 20177-!-item-!-187;#058&012683

Is  $x > y$  ?

(1)  $x + y < 0$

(2)  $x - y > 0$

209. 20231-!-item-!-187;#058&012732

For each month of next year, Company R's monthly revenue target is  $x$  dollars greater than its monthly revenue target for the preceding month. What is Company R's revenue target for March of next year?

(1) Company R's revenue target for December of next year is \$310,000.

(2) Company R's revenue target for September of next year is \$30,000 greater than its revenue target for June of next year.

210. 20285-!-item-!-187;#058&012741

Is  $m + z > 0$  ?

(1)  $m - 3z > 0$

(2)  $4z - m > 0$

211. 20437-!-item-!-187;#058&012817

If  $k$  is a positive integer, then  $20k$  is divisible by how many different positive integers?

(1)  $k$  is prime.

(2)  $k = 7$

212. 20491-!-item-!-187;#058&012823

This morning, a certain sugar container was full. Since then some of the sugar from this container was used to make cookies. If no other sugar was removed from or added to the container, by what percent did the amount of sugar in the container decrease?

(1) The amount of sugar in the container after making the cookies would need to be increased by 30 percent to fill the container.

(2) Six cups of sugar from the container were used to make the cookies.

213. 20735-!-item-!-187;#058&013187

If  $a$  and  $b$  are positive numbers, what are the coordinates of the midpoint of line segment  $CD$  in the  $xy$ -plane?

(1) The coordinates of  $C$  are  $(a, 1 - b)$ .

(2) The coordinates of  $D$  are  $(1 - a, b)$ .

214. 20789-!-item-!-187;#058&013258

The cost of a square slab is proportional to its thickness and also proportional to the square of its length. What is the cost of a square slab that is 3 meters long and 0.1 meter thick?

(1) The cost of a square slab that is 2 meters long and 0.2 meter thick is \$160 more than the cost of a square slab that is 2 meters long and 0.1 meter thick.

(2) The cost of a square slab that is 3 meters long and 0.1 meter thick is \$200 more than the cost of a square slab that is 2

meters long and 0.1 meter thick.

215. 20843-!-item-!-187;#058&013306

If Bob produces 36 or fewer items in a week, he is paid  $x$  dollars per item. If Bob produces more than 36 items in a week, he is paid  $x$  dollars per item for the first 36 items and 1.5 times that amount for each additional item. How many items did Bob produce last week?

(1) Last week Bob was paid a total of \$480 for the items that he produced that week.

(2) This week Bob produced 2 items more than last week and was paid a total of \$510 for the items that he produced this week.

216. 20897-!-item-!-187;#058&013307

Is  $x < y$  ?

(1)  $2x < 3y$

(2)  $xy > 0$

217. 21093-!-item-!-187;#058&013542

$$a_1, a_2, a_3, \dots, a_{15}$$

In the sequence shown,  $a_n = a_{n-1} + k$ , where  $2 \leq n \leq 15$  and  $k$  is a nonzero constant. How many of the terms in the sequence are greater than 10 ?

(1)  $a_1 = 24$

(2)  $a_8 = 10$

218. 21147-!-item-!-187;#058&013552

Is  $4z > -6$  ?

(1)  $z < 7$

(2)  $z > -1$

**Practice Test 1 Data Sufficiency Keys:**

1. C 2. D 3. B 4. D 5. E 6. E 7. C 8. B 9. A 10. C 11. D 12. E 13. B 14. E 15. D 16. C 17. E 18. E 19. B 20. B  
21. E 22. B 23. B 24. A 25. B 26. D 27. E 28. E 29. D 30. E 31. C 32. E 33. B 34. A 35. E 36. D 37. C 38. A 39. C 40. E  
41. E 42. C 43. E 44. C 45. E 46. C 47. B 48. C 49. C 50. C 51. E 52. C 53. A 54. B 55. C 56. A 57. C 58. D 59. C 60. B  
61. C 62. A 63. B 64. B 65. A 66. D 67. E 68. B 69. A 70. C 71. A 72. E 73. D 74. B 75. E 76. B 77. B 78. C 79. C 80. A  
81. B 82. A 83. D 84. D 85. B 86. E 87. C 88. C 89. B 90. D 91. B 92. A 93. B 94. C 95. A 96. A 97. B 98. B 99. C 100. A  
101. B 102. B 103. C 104. A 105. C 106. E 107. D 108. B 109. A 110. C 111. E 112. C 113. A 114. A 115. A  
116. D 117. E 118. C 119. D 120. E 121. B 122. B 123. B 124. D 125. D 126. E 127. A 128. E 129. A 130. C  
131. D 132. C 133. B 134. C 135. C 136. A 137. D 138. C 139. E 140. D 141. E 142. D 143. D 144. A 145. C  
146. B 147. C 148. C 149. B 150. C 151. D 152. C 153. C 154. D 155. D 156. D 157. A 158. E 159. C 160. E  
161. D 162. C 163. E 164. E 165. A 166. D 167. A 168. E 169. B 170. B 171. B 172. C 173. D 174. E 175. A  
176. D 177. C 178. B 179. C 180. C 181. C 182. B 183. D 184. A 185. B 186. A 187. A 188. D 189. A 190. C  
191. E 192. B 193. C 194. D 195. B 196. B 197. C 198. D 199. A 200. D 201. E 202. D 203. D 204. C 205. C  
206. C 207. D 208. B 209. C 210. C 211. B 212. A 213. C 214. D 215. E 216. E 217. B 218. B