1.

Each of the 120 people in a group donated one of three different amounts to charity. Of the people in the group, $\frac{2}{3}$ donated \$10.00 each, $\frac{1}{4}$ donated \$15.00 each, and the rest donated \$25.00 each.

Quantity A	Quantity B
The average (arithmetic mean) amount donated per person in the group	\$12.50

- Quantity A is greater.
- Quantity B is greater.
- The two quantities are equal.
- The relationship cannot be determined from the information given.

2.

Quantity A: The greatest possible value of $\frac{2}{x-y}$, where $6 \le x \le 8$ and $2 \le y \le 5$ Quantity B: $\frac{2}{3}$

A Quantity A is greater.

B Quantity B is greater.

C The two quantities are equal.

D The relationship cannot be determined from the information given.

3.

The function f is defined by $f(x) = x(x^2 - 4)$ for all numbers x.

Quantity A:The number of points at which the graph of $y = f(x)$ intersects the x-axis in the xy-plane

Quantity B:3

A Quantity A is greater.

B Quantity B is greater.

C The two quantities are equal.

D The relationship cannot be determined from the information given.

4.

$0 < r < v < x < y < z$

Quantity A: The average (arithmetic mean) of the 4 numbers r, v, y, and z

Quantity B: The average (arithmetic mean) of the 5 numbers r, v, x , y, and z

A Quantity A is greater.

B Quantity B is greater.

C The two quantities are equal.

D The relationship cannot be determined from the information given.

5.

The volume of a right circular cylinder is 2,000π, and its height is 16 times its radius.

Quantity A:The radius of the cylinder

Quantity B:5

A Quantity A is greater.

B Quantity B is greater.

C The two quantities are equal.

D The relationship cannot be determined from the information given.

6.

$C_1, C_2, C_3, \ldots C_j \ldots$

The sequence shown is defined by $C_1 = 5$ and $C_{j+1} = \frac{1}{5} C_j$ for each positive integer j.

Quantity A: C_{10}

Quantity B: $5^{15} C_{25}$

A Quantity A is greater.

B Quantity B is greater.

C The two quantities are equal.

D The relationship cannot be determined from the information given.

7.

An investor placed a total of $6,400 in two accounts for one year. One of the accounts earned simple annual interest at a rate of 5 percent, and the other earned simple annual interest at a rate of 3 percent. The investor made no deposits or withdrawals from the accounts. If each account earned the same amount of interest after one year, what was the total amount of interest earned from both accounts?

A $128

B $144

C $240

D $256

E $512

8.

A flat rectangular tile has a length that is between 4 inches and 6 inches and a width that is between 3 inches and 6 inches. Which of the following could be the value of the area, in square feet, of the top surface of the tile? (1 foot = 12 inches)

Indicate all such values.

A $\frac{1}{8}$

B $\frac{1}{6}$

C $\frac{1}{2}$

D $\frac{4}{3}$

9.

If 2, 4, 6, and 9 are the digits of two 2-digit integers, what is the least possible positive difference between the integers?

A 28

B 27

C 17

D 13

E 9

10.

$-|x|=|x|$

Quantity A:x

Quantity B:0

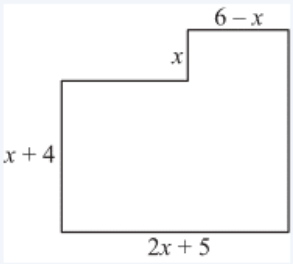
A Quantity A is greater.

B Quantity B is greater.

C The two quantities are equal.

D The relationship cannot be determined from the information given.

11.



In the figure, all intersecting line segments meet at right angles. Which of the following represents the perimeter of the figure in terms of x ?

A 3x+15

B 4x+9

C 5x+19

D 6x+16

E 8x+18

12.

A certain experiment has only three possible outcomes. The probabilities of the outcomes are p, r, and s. If r=1-3p, what is s in terms of p ?

A p

B 2p

C 3p

D 1-p

E 1-2p

13.

When the positive integer d is divided by 12, the remainder is 5. What is the remainder when d^2 is divided by 8 ?

A 1

B 3

C 5

D 6

E 7

14.

Subject material:

Percent Distribution of Primary Modes of Transportation
Used by Commuters in Country *S* in June 2016

Mode of Transportation	Percent of Commuters
Drive alone	35%
Bus	25%
Train	20%
Bicycle or motorcycle	10%
Car pool	4%
Other	6%

Total number of commuters in Country S in June 2016: 8 million

Question Question Question

If 75 percent of the commuters were local commuters and if 20 percent of the local commuters used buses as their primary mode of transportation, what percent of all commuters who used buses as their primary mode of transportation were local commuters?

A 6%

B 15%

C 30%

D 60%

E 75%

15.

For commuters who used car pools as their primary mode of transportation, the average (arithmetic mean) number of commuters per car pool vehicle was 2.5. Which of the following is closest to the total number of car pool vehicles for these commuters?

A 0.02 million

B 0.13 million

C 0.32 million

D 0.80 million

E 1.20 million

16.

From June 2016 to December 2016, the total number of commuters increased by x percent while the percent of commuters who used trains as their primary mode of transportation remained the same. If the number of commuters who used trains as their primary mode of transportation increased by 16,000 from June to December, what is the value of x?

A. 1 B. 2 C. 3 D. 4 E. 5

17.

The sale price of a certain radio is 25 percent less than the list price and 40 percent greater than the wholesale price of the radio. If the wholesale price of the radio is $30, what is the list price of the radio?

A $52

B $53

C $54

D $55

E $56

18.

A list consists of three different positive integers whose sum is 10.

Which of the following statements individually provide(s) sufficient additional information to determine the value of the greatest integer in the list?

Indicate all such statements.

- ☐ The median of the integers in the list is 3.
- ☐ The range of the integers in the list is 5.
- ☐ The sum of the greatest integer and the least integer in the list is 7.

19.

A group of n college students bought three identical round cakes to share. They divided the first cake into equal-sized pieces, one piece for each of them. They did the same with the second cake. After 3 of the students decided they did not want any more cake, the remaining students divided the third cake into equal-sized pieces, one piece for each of them. If Silvia received 1 piece from each of the three cakes, then, in terms of n, the amount of cake that she received was the same as what fraction of 1 cake?

A $\frac{n+2}{n(n-3)}$

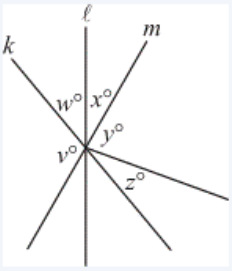
B $\frac{2n-3}{n(n-3)}$

C $\frac{3n-3}{n(n-3)}$

D $\frac{3n-6}{n(n-3)}$

E $\frac{3n-3}{2n(n-3)}$

20.



In the figure, lines k, l, and m intersect at a single point, which is the vertex of all the angles shown. If x=z, y=2w, and v=110, what is the ratio of x to w?

Give your answer as a fraction.

Answer Key: CACDCCC(AB)DCEBADBAEBD(3/4)