

Powerprep Plus 4 Quant Set 4 Answers

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1) B

SET 4

Correct rate: 71%

Difficulty: difficult

The sum of the internal angles of the polygon is $(n-2)*180$.

This title is a nine-sided polygon, the internal angle is the internal angle and the number of sides = $7*180/9=140$, and the internal angles of the isosceles triangle are 70, 70, and 40 respectively. So the waist is greater than the bottom side

Quantity A : $9 AB = 3AB + 6 AB$

Quantity B : $3 AB + 6 OA$

Angle AOB = 40 So $AB < OA$

so B is big

2) D

SET 4

Correct rate: 76%

Difficulty: difficult

Plug in numbers to try:

Scenario 1: $X = 2; Y = 1$

$$A: XY = 2 \times 1 = 2$$

$$B: X^2 = 2^2 = 4$$

Eliminate answer choices A and C

Scenario 2:

$$X = -2; Y = -4$$

$$A: XY = (-2) \times (-4) = 8$$

$$B: X^2 = (-2)^2 = 4$$

Therefore, D is correct due to two conflicting answers.

3) B

SET 4

Correct rate: 52%

Difficulty: difficult

See the problem clearly, the element of S is the product of

a: 1 – 8

b: 2 – 9

so in a and b:

even number: 2, 4, 6, 8

odd number: 1, 3, 5, 7, 9

A : Odd = odd × odd

B: even = even × even = even × odd

If there is no repetition, then

$$A = \binom{5}{2} = 10$$

$$B = \text{odd} \times \text{even} + \text{even} \times \text{even} = \binom{4}{1} \times \binom{5}{1} + \binom{4}{2} = 20 + 6 = 26$$

even if there is Duplicate, but because there must not be many repetitions, $B > A$

4) B

SET 4

Correct rate: 72%

Difficulty: difficult

$$(n + 7)^2 - 49 = n^2 + n + 49 - 49 = n(n + 14)$$

The simplification result is $n(n+14)$, which is equivalent to saying that multiplication and n are divided by n , and the remainder is 0.

5) D

SET 4

Correct rate: 50%

Difficulty: difficult

The standard deviation is actually the degree of dispersion (compactness) between each number and the average; the smaller the standard deviation, the more the data gathers → the smaller the difference between each number and the average; the

larger the standard deviation, the more the data goes out Diffusion → The greater the difference between each number and the average value.

—————

\$450, \$760, \$900, \$1,000, \$1,250, \$1,400, \$1,750, \$2,000

Question: One wrong value is 250 greater than the original value, and the other wrong value is 250 less than the original value.

Find the new standard deviation and The relationship of the old standard deviation.

That is, give a number +250 and give a number -250.

Case discussion:

Case 1: 450-250, 2000+250 ∴The

data has spread even more, and there are two values that fly farther from the average~

∴The standard deviation after the change>The standard deviation of the error series

Case 2: 450+250, 2000-250 ∴The

data is more compact, and these two values fly back to a place closer to the average.

Then, because the question does not specify which number has become larger, which number has become smaller, it is impossible to determine the two The size of the standard deviation of the column values

6) C

SET 4

Correct rate: 52%

Difficulty: difficult

for lists containing an odd number of values, the median is the unique middle value when data is in increasing/decreasing order. 0 is a neutral integer because it's neither negative nor positive. Hence, 1, 2, 12, 13 , 14 and the sum can be calculated to be 42, so the C option is correct.

7) B

SET 4

Correct rate: 49%

Difficulty: difficult

According to the definition of median, it can be seen that the median of the sequence is: $(X+Y)/2$. Since the sequence mean is less than median, it can be known that $(X-W)$ must be greater than $(Z-Y)$, that is, QB is greater than QA , and the B option is correct.

$$0.25(x + y + w + z) < 0.5(x + y) \Rightarrow zy < xw - (w + 3y)$$
$$w + 3y > 0, \quad \text{so } zy < xw.$$

8) 16

SET 4

Correct rate: 91%

Difficulty: difficult

$$\frac{3 \times 20 + 2 \times 10}{5} = 16$$

9) A

SET 4

Correct rate: 84%

Difficulty: difficult

Checking the wrong questions, undercounting 40% of the part: $40\% \times 30\% \times X = 18$, $X = 150$

10) D

SET 4

Correct rate: 77%

Difficulty: difficult

The multiplication of the two parentheses $(r-3)(n-3)$ is less than five. If you want the value of $(n-3)$ to be the largest, then the value of $(r-3)$ must be the smallest, so r must be 4. .

Then put $r=4$ into the inequality $(4-3)*(n-3)<5$.

Solve the inequality $n<8$ Then the maximum integer value of n is 7

11) C

SET 4

Correct rate: 91%

Difficulty: difficult

$$RS = \sqrt{(3 - 3)^2 + (6 - (-4))^2} = \sqrt{100}$$

$$TW = \sqrt{(k - (-1))^2 + (-1 - (5))^2} = \sqrt{(k + 1)^2 + 36} = \sqrt{100} \Rightarrow k = 7$$

12) B

SET 4

Correct rate: 85%

Difficulty: difficult

B area=A area=8, E+F area=C+D area=(64-8-8)/2. Therefore, we know B, E+F, C+D. But the area of C is not available

13) B

SET 4

Correct rate: 91%

Difficulty: difficult

Because 7 and 13 have no common divisor, such a number must be their product, which is a multiple of 91. From 100 to 999, there will be one such number for every 100, so there are nine.

14) E

SET 4

Correct rate:69%

Difficulty: difficult

According to the title, each protein has 4 calories, each serving has 2 grams protein, $2*4=8$ calories.

15)D

SET 4

Correct rate: 73%

Difficulty: difficult

$$\frac{4 \times 22.7}{208} \cong \frac{22.7}{52} \cong \frac{20}{50} = \frac{2}{5}$$

16) A

SET 4

Correct rate: 64%

Difficulty: difficult

First of all, the default is that the specific data in the table below comes from 1 serving size, and servings per container : 12 means: serving per container = 12 serving size

The cholesterol of the container of the candy is $10 \times 12 = 120\text{mg}$, the cholesterol of the brownie is $18 \times 4 = 72$, then the lesser percentage is: $(72 - 120) / 120 = -40\%$

17) B

SET 4

Correct rate: 50%

Difficulty: difficult

$x_S = x_R =$ principal amount

$$x_S \times \left(1 + \left(\frac{0.05}{12} \right) \times 9 \right) = 26,145 \Rightarrow x_S = 25,200$$

$$\begin{aligned} \Rightarrow \text{amount owed for loan R at the end of 10 months} &= x_R \times \left(1 + \left(\frac{0.06}{12} \right) \times 10 \right) \\ &= 25,200 \times \left(1 + \left(\frac{0.06}{12} \right) \times 10 \right) = 26,460 \end{aligned}$$

18) E

SET 4

Correct rate: 55%

Difficulty: difficult

From the question, we know that $5x+7y = 92$. Through this formula, we can infer that $x \leq 17$, $y \leq 12$, x and y must be positive integers

to represent x , and $x = (92-7y)/5$

Because x must be a positive integer, $92-7y$ must be a multiple of 5, and the ones digit of the result of $7*y$ must be 2 or 7,

so $y = 1, 6, \text{ or } 11 \rightarrow (92-7y) = 85, 50 \text{ or } 15$ meets the requirement of multiples of 5.

Correspondingly, $x = 17, 10 \text{ or } 3$

$x/y = 17/1, 5/3 \text{ or } 3/11$

so the answer is E.

19) 15

SET 4

Correct rate: 86%

Difficulty: difficult

Sum is 0 when n is even

or

Sum is -3 when n is odd

$$a + ar + ar^2 + \dots + ar^{(n-1)} = \sum_{k=0}^{n-1} ar^k = a\left(\frac{1-r^n}{1-r}\right)$$

$$\text{Sum} = (-3) \left(\frac{1 - (-1)^n}{1 - (-1)} \right) = -3$$

$$\text{Average} = \left(\frac{-3}{n} \right) = \frac{-1}{5} \Rightarrow n = 15$$

20)A, B, C SET 4

Correct rate: 42%

Difficulty: difficult

How to see boxplot? Box plot default: the values from left to right are: from ~small~ to ~big~:

- ① The vertical line from the leftmost top to the head of the List in the above figure = the location of the minimum value, and the vertical line from the rightmost top to the head is Q4 = the location of the maximum value.
- ② Rectangular box: the leftmost side is the position of Q1, the vertical line in the middle is the position of Q2 = the median, and the rightmost side is the position of Q3. — Among them, the meaning of Q1~Q4 is:
Q1: In the first 25% position;
Q2: At the second 25% position, that is, at the 50% position = median;
Q3: At the third 25% position, that is, at the 75% position;
Q4: At the third 25% position, that is, at the 100% position = the maximum value. —
- ③ The value of each position = the value of the intersection of the vertical line extending downwards and the number axis.
- ④ Interquartile range Interquartile range, that is, interquartile range = Q3 value-Q1 value.
- ⑤ The range of list = maximum value-minimum value. Back to the topic: Option A: It can be seen that the median of list2 is to the right of the median of list1, because the value of the box plot is from the left small to the right large ∴ The median of list2 is large and correct.

Thanks