EXAM SAMPLE FOR MASTER'S PROGRAMME FINANCE

Question 1 (5 points)

Sarah's average (arithmetic mean) monthly spending on groceries for the months of January, February, and March was $200. During which month did she spend the most?

(1) The lowest spending was in February.

(2) The total of her spending for February and March was $450.

a. Statements (1) and (2) TOGETHER are NOT sufficient to answer the question asked, and additional data are needed

b. BOTH statements (1) and (2) TOGETHER are sufficient to answer the question asked, but NEITHER statement ALONE is sufficient

c. Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient to answer the question asked

d. Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient to answer the question asked

e. EACH statement ALONE is sufficient to answer the question asked

Question 2 (5 points)

A ladder is leaning against a vertical wall. Each rung of the ladder is 1.5 feet apart vertically. How many rungs does the ladder have?

(1) The ladder is leaning against a vertical wall reaching a height of 12 feet.

(2) The bottom of the ladder is 5 feet away from the wall.

a. Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient to answer the question asked

b. EACH statement ALONE is sufficient to answer the question asked

c. BOTH statements (1) and (2) TOGETHER are sufficient to answer the question asked, but NEITHER statement ALONE is sufficient

d. Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient to answer the question asked

e. Statements (1) and (2) TOGETHER are NOT sufficient to answer the question asked, and additional data are needed

Question 3 (5 points)

A chemical solution contains three components: X, Y, and Z. The total volume is 18 liters. What is the volume of component X?

(1) The ratio X:Y = 2:3 and the ratio Y:Z = 6:5

(2) Component Z constitutes 50% of the total mixture

a. BOTH statements (1) and (2) TOGETHER are sufficient to answer the question asked, but NEITHER statement ALONE is sufficient

b. Statements (1) and (2) TOGETHER are NOT sufficient to answer the question asked, and additional data are needed

c. Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient to answer the question asked

d. EACH statement ALONE is sufficient to answer the question asked

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Question 4 (5 points)

Henry purchased 3 items during a sale. He received a 25 percent discount off the regular price of the most expensive item and a 15 percent discount off the regular price of each of the other 2 items. Was the total discount of these three items greater than 20 percent of the sum of the regular prices of the 3 items?

(1) The regular price of the most expensive item was \$60, and the regular price of the next most expensive item was \$30.

(2) The regular price of the least expensive item was \$20.

a. EACH statement ALONE is sufficient to answer the question asked

b. Statements (1) and (2) TOGETHER are NOT sufficient to answer the question asked, and additional data are needed

c. Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient to answer the question asked

d. BOTH statements (1) and (2) TOGETHER are sufficient to answer the question asked, but NEITHER statement ALONE is sufficient

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Question 5 (5 points)

If y is greater than 120 percent of x, is y greater than 80?

(1) $x > 80$

(2) $y - x = 15$

a. EACH statement ALONE is sufficient to answer the question asked

b. Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient to answer the question asked

c. Statements (1) and (2) TOGETHER are NOT sufficient to answer the question asked, and additional data are needed

d. Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient to answer the question asked

e. BOTH statements (1) and (2) TOGETHER are sufficient to answer the question asked, but NEITHER statement ALONE is sufficient

Question 6 (4 points)

If each of the 200 balls is either black, white, or black & white, how many balls are black & white?

(1) Of the 200 balls, 90% has white color on it.

(2) Of the 200 balls, 90% has black color on it.

a. Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient to answer the question asked

b. Statements (1) and (2) TOGETHER are NOT sufficient to answer the question asked, and additional data are needed

c. Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient to answer the question asked

d. BOTH statements (1) and (2) TOGETHER are sufficient to answer the question asked, but NEITHER statement ALONE is sufficient

e. EACH statement ALONE is sufficient to answer the question asked

Question 7 (4 points)

Is $x^3 > x^2$?

(1) $x > 0$

(2) $x < 3$

a. BOTH statements (1) and (2) TOGETHER are sufficient to answer the question asked, but NEITHER statement ALONE is sufficient

b. Statements (1) and (2) TOGETHER are NOT sufficient to answer the question asked, and additional data are needed

c. EACH statement ALONE is sufficient to answer the question asked

d. Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient to answer the question asked

e. Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient to answer the question asked

Question 8 (4 points)

Working alone, Bob can complete a task in 'a' days and Jack in 'b' days. They take turns in doing the task with each working 2 days at a time. If Bob starts they finish the task in exactly 10 days. If Jack starts, they take 1 day more. How long does it take (in days) to complete the task if they both work together?

a. $\frac{46}{9}$

b. $\frac{50}{8}$

c. $\frac{17}{4}$

d. $\frac{16}{3}$

e. $\frac{11}{2}$

Question 9 (4 points)

What is the range of 5 distinct single digit positive integers if their average is 5?

(1) Their median is 6.

(2) The average of the 3 largest among the 5 numbers is 7.

a. statement (1) ALONE is sufficient, but statement (2) alone is not sufficient to answer the question asked

b. statement (2) ALONE is sufficient, but statement (1) alone is not sufficient to answer the question asked

c. BOTH statements (1) and (2) TOGETHER are sufficient to answer the question asked, but NEITHER statement ALONE is sufficient

d. EACH statement ALONE is sufficient to answer the question asked

e. statements (1) and (2) TOGETHER are NOT sufficient to answer the question asked, and additional data specific to the problem are needed

Question 10 (4 points)

If sets A and B have n elements each, are the ranges of the two sets equal?

(1) Both sets are symmetric about their respective medians.

(2) The means of the two sets are equal

a. statement (1) ALONE is sufficient, but statement (2) alone is not sufficient to answer the question asked

b. statement (2) ALONE is sufficient, but statement (1) alone is not sufficient to answer the question asked

c. BOTH statements (1) and (2) TOGETHER are sufficient to answer the question asked, but NEITHER statement ALONE is sufficient

d. EACH statement ALONE is sufficient to answer the question asked

e. statements (1) and (2) TOGETHER are NOT sufficient to answer the question asked, and additional data specific to the problem are needed

Question 11 (4 points)

The arithmetic mean of x^2, $(2x + 7)$, $2x^2$, and x is 33.25. x is a positive integer. What is the value of x?

a. 4

b. 6

c. 10

d. 12

e. 14

Question 12 (4 points)

Consider the following three sets:

Set A: $\{0, 0, 10, 10\}$

Set B: $\{5, 5, 5, 5\}$

Set C: $\{4, 4, 6, 6\}$

Which of the following statements is/are true?

I. The means of the three sets are equal

II. The medians of the three sets are equal

III. Set A has the lowest standard deviation.

a. I and II only

b. I and III only

c. II and III only

d. I, II, and III

e. None are true

Question 13 (4 points)

A ship is carrying several cats, along with a crew consisting of sailors, a cook, and a one-legged captain, to a nearby port. If these passengers collectively have 15 heads and 41 legs, how many cats are on the ship?

a. 3

b. 5

c. 6

d. 7

e. 8

Question 14 (4 points)

Is $x \cdot |x| \cdot x = x^3$?

(1) $x^5 < 0$

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

a. EACH statement ALONE is sufficient to answer the question asked

b. statements (1) and (2) TOGETHER are NOT sufficient to answer the question asked, and additional data specific to the problem are needed

c. BOTH statements (1) and (2) TOGETHER are sufficient to answer the question asked, but NEITHER statement ALONE is sufficient

d. statement (1) ALONE is sufficient, but statement (2) alone is not sufficient to answer the question asked

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Question 15 (4 points)

A certain law firm consists of 5 senior partners and 4 junior partners. How many different groups of 3 partners can be formed in which at least one member of the group is a senior partner?

a. 80

b. 100

c. 120

d. 144

e. 160

Question 16 (3 points)

Statement: If the annual growth rate of Company X's revenue from 2022 to 2023 continues, its 2024 Net Profit will exceed \$0.2 million.

Year	Revenue (\$)	Operating Costs (\$)	Net Profit Margin (%)
2022	800,000	600,000	15%
2023	1,100,000	690,000	18%

a. True

b. False

c. Cannot be determined (additional data needed)

d. Statement is partly true, partly wrong

Question 17 (3 points)

Statement: Based on the table, profit per unit in Q2 was 20% higher than in Q1.

Quarter	Units Sold	Revenue ($)	Total Costs ($)
Q1	1,000	50,000	35,000
Q2	1,200	66,000	42,000

a. True

b. False

c. Cannot be determined (additional data needed)

d. Statement is partly true, partly wrong

Question 18 (3 points)

Statement: If the trend in the table continues, the combined market share of Companies A and C will exceed 70% in 2025.

Company	2023 Market Share (%)	2024 Market Share (%)	Growth Rate (pp/year)
A	30	35	+5
B	25	28	+3
C	45	37	-8

a. True

b. False

c. Cannot be determined (additional data needed)

d. Statement is partly true, partly wrong

Question 19 (3 points)

Statement: The data indicates that City W's population density in 2023 was more than 15% higher than in 2022.

City	2022 Area (km²)	2022 Population	2023 Population
V	200	600,000	630,000
W	150	720,000	850,000

a. True

b. False

c. Cannot be determined (additional data needed)

d. Statement is partly true, partly wrong

Question 20 (3 points)

Statement: The table proves that Strategy A was more cost-effective than Strategy B.

Strategy	Customers Gained	Marketing Cost ($)	Gross profit per Customer ($)
A	1,000	50,000	80
B	1,200	72,000	70

a. True

b. False

c. Cannot be determined (additional data needed)

d. Statement is partly true, partly wrong

Question 21 (3 points)

The graph below shows the dynamics of SP500 index.

Statement: SP500 index has a positive trend in the period from January 2025 till July 2025

a. True

b. False

c. Cannot be determined (additional data needed)

d. Statement is partly true, partly wrong

Question 22 (4 points)

The graph below shows the dynamics of SP500 index.

Statement: If one calculate the monthly growth rate of SP500 index, there will be at least one month at which the growth rate is lower than -30%.

a. True

b. False

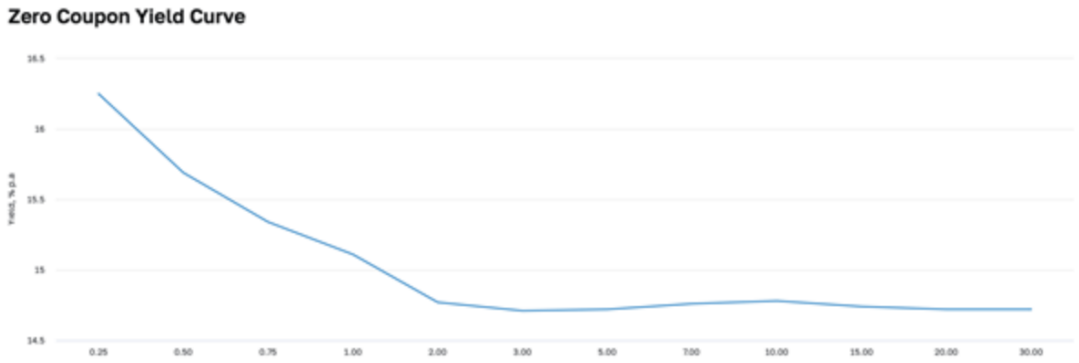
c. Cannot be determined (additional data needed)

d. Statement is partly true, partly wrong

Question 23 (4 points)

The graph below shows the zero-coupon yield curve for Russian market. The yield (annual %) is on the Y-axis, the maturity (investment horizon) is on the X-axis (in years). Assume this curve shows the yields for different risk-free financial instruments (bonds).

Statement: If one invests RUB 100 in a risk free financial instrument (bond) for 2 years, he (she) will receive approximately RUB 14.8 as the result of this investment.



a. True

b. False

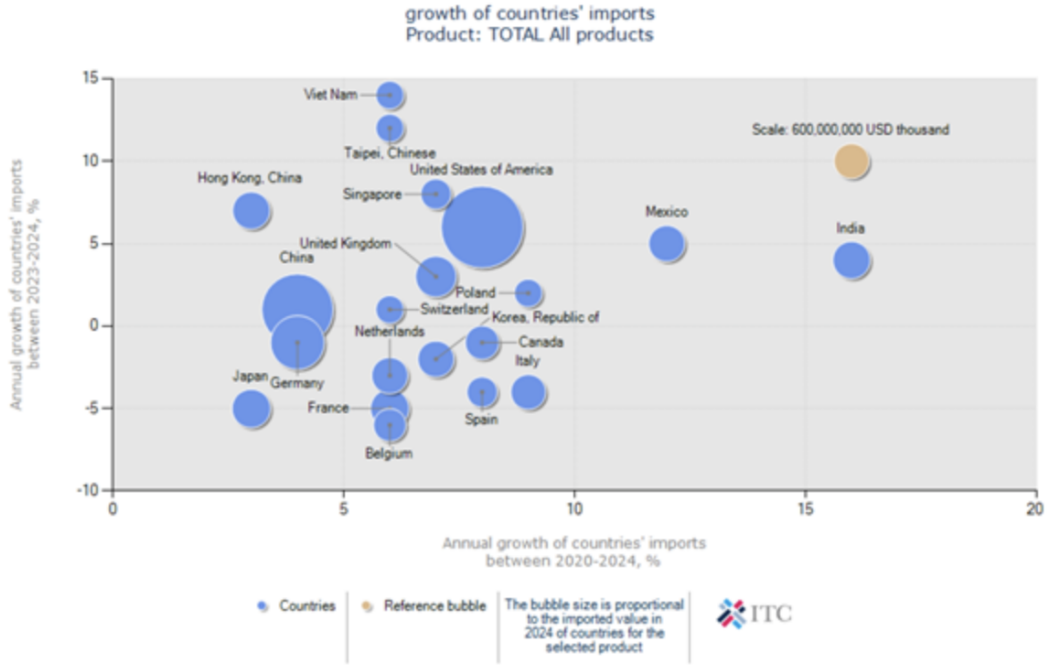
c. Cannot be determined (additional data needed)

d. Statement is partly true, partly wrong

Question 24 (5 points)

The graph below shows the growth of countries' imports volume.

Statement: 100% of countries, which have annual growth of imports between 2020 and 2024 higher than 10%, had positive annual growth of imports between 2020 and 2023



a. True

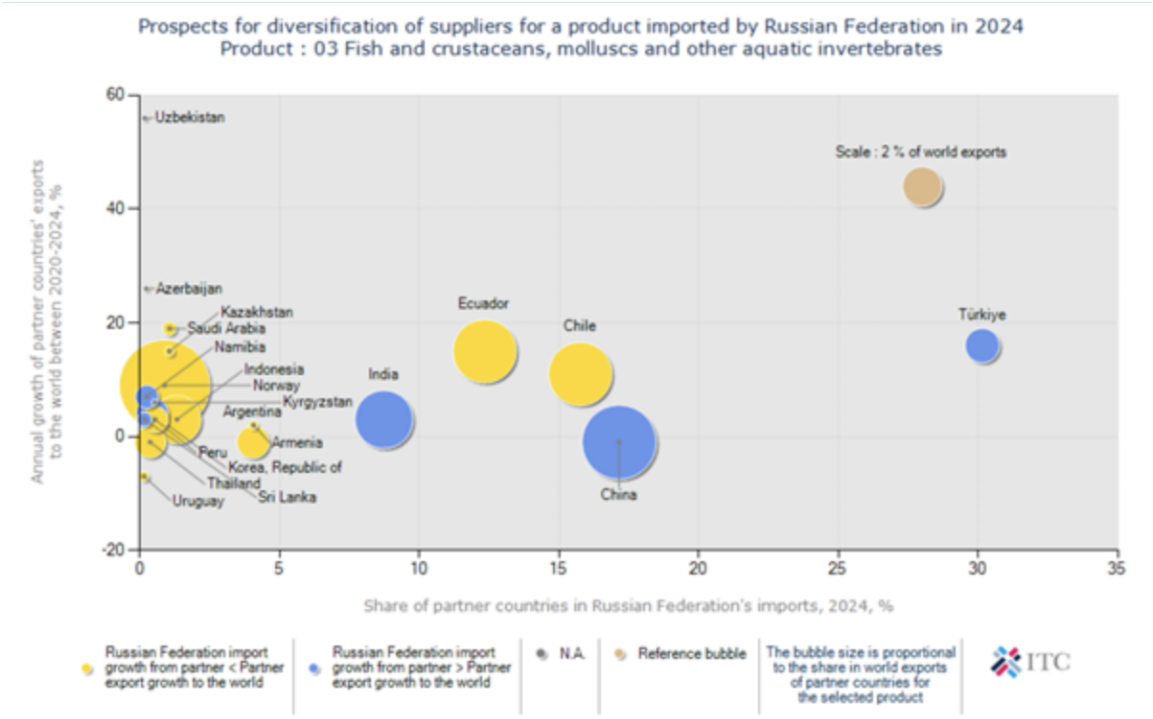
b. False

c. Cannot be determined (additional data needed)

d. Statement is partly true, partly wrong

Question 25 (4 points)

The graph below shows the annual growth of Russian Federation's imports of fish from partner counties VS the annual growth of partner countries' fish exports. **Statement:** At least 70% of partner countries, each of which accounts for more than 15% of Russian imports of fish products, each account for more than 2% of global exports of fish products.



a. True

b. False

c. Cannot be determined (additional data needed)

d. Statement is partly true, partly wrong

End of Exam