

Concours d'entrée en Classe Préparatoire (CP) Épreuve d'Économie

CORRIGÉ

Part 1: Problem solving & Quantitative reasoning 20 points - Indicative time: 90 minutes

Part 2: General Knowledge of Economics and Management 10 points - Indicative time: 30 minutes

Q1. Chelsea invests \$1200 at 5% interest. How much additional money must she invest at 8% so that her total annual income will be equal to 6% of her entire investment?

x = the amount invested at 8%. Chelsea's total amount invested will be 1200 + x. The interest income of 5% on the \$1200 plus the interest income of 8% on x will give you the interest income from both investments.

$$0.08x + 0.05(1200) = 0.06(1,200 + x)$$

$$0.08x + 60 = 72 + 0.06x$$

$$0.02x = 12$$

$$x = 12/0.02 = 1200/2 = \$600$$

Q2. In Boeng Keng Kang high school, 20 percent of the students are musicians. In Sangkat Olympic high school, 25 percent of the students are musicians. If Sangkat high school has 60 percent more students than BKK high school then the number of musicians in Sangkat high school is what percent of the musicians in BKK?

If there are 100 students in BKK, 20 are musicians.

If there are 100 students in BKK, there are 160 students in Sangkat and $160 \times 0.25 = 40$ are musicians. the comparison is between Sangkat's musicians and half of BKK's musicians. 20.

$$40 = 200\% \text{ of } 20.$$

Q3. The sum of prime numbers between 110 and 125 is:

$$113$$

Q4. Louise is traveling from Battambang to Phnom Penh, a distance of 80 km, at a rate of 25 km/h. Fred is traveling from Phnom Penh to Battambang at a rate of 35 km/h but leaves 1h after Louise. They are both traveling on the same route. How long will have Fred traveled by the time he passes Louise?

$$\text{Fred's time} = T, \text{ Louise's time} = T+1$$

$$\text{Fred's distance input} = 35T, \text{ Samantha's distance input} = 25(T+1)$$

$$25(T+1) + 35T = 80$$

$$25T + 25 + 35T = 80$$

$$60T = 55$$

$$T = 55/60 = 55 \text{ minutes.}$$

Q5. An apartment building has 200 tenants, 80% of whom use the amenities. Of the people who use the amenities, 90 use the indoor pool and 130 use the fitness room. How many tenants use both the indoor pool and the fitness room?

60

Q6. The students grades for the exam are 30 37 28 42 51 19 24 22 38 and the average score is 31,6. Find the missing grade.

25

Q7. Arya spends half of her spare time studying, $\frac{1}{8}$ playing music, $\frac{1}{4}$ dancing and the rest seeing her friends. She gets 44 hours of spare time each week. What time does she spend doing each thing?

Studying = 22h

Dancing = 11h

Music = 5,5h

Friends = 5,5h

Q8. In average, one student spends every day (24h) as much time in class as he spends working, twice more time playing, 1,5 times helping his/her parents, 4 times sleeping, half the time eating. What time does he spend doing the different activities listed above?

class = 1

work = 1

play = 2

help = 1,5

sleep = 4

eat = 0,5

$$1x + 1x + 2x + 1,5x + 4x + 0,5x = 24$$

$$10x = 24$$

$$x = 2,4$$

Q9. Lily has class at 8 am. She arrived at 8h42 this morning. She explained to her teacher that she she left her home at 7h31 am riding her motorcycle at 20km/h, and she was stuck in traffic for 20 minutes. How far does Lily live from the school?

Lily's drive lasted 71 minutes. She was stuck in traffic for 20 minutes. The time she actually spent driving = 71-20 = 51 minutes. She drives at 20km/h so the distance to her house is

$$(20 \times 51) / 60 = 51 / 3 = 17. \text{ Lily lives 17 km away from the school.}$$

Q10. There are 80 questions in an exam. For the first 60 questions, Dara got 50% of right answers. What percentage of the right answers of the remaining questions does Dara need in order to get 10/20 of total score?

80 questions = 20 points

1 question = 0,25 points

To get 16/20, Dara will need 40 right answers.

For the first 60 questions she got $60 \times 0,5 = 30 = 7,5/20$.

For the last 20 questions she will need $40 - 30 = 10 = 2,5/20 = 12,5\%$

Q11. If x is an odd integer and y is an even integer, y is not a factor of x. True or false?

True

Q12. The price of wheat in January 2014 is \$2/kg. In January 2015 it increases by 5%. In January 2016, it increases again by 10%. In January 2017 it decreases by 15%. What is the price of wheat in 2015, 2016 and 2017 (approximately)?

$2 \times 1,05 = 2,1$

2,31

1,9

Q13. There are 82 students in a class, 37 of them enroll in the English class, 31 enroll in the French class. We also know that among the students enrolled in English or French classes, 12 enrolled both in English and French. How many students did not enroll in any class?

$82 - 68 = 14$

Q14. What is the sum of x, y and z?

$$2x + y - z = 10$$

$$x - 2y + 2z = 15$$

$$4x + y - 2z = 28$$

$$x = 7 \quad y = -8 \rightarrow x + y + z = -5$$

Q15. A car consumes 12L of gasoline for 100km. The car departs at 13h15 with 22L of gasoline in her tank and she stops for refill at 14h55 and there are 47L of gasoline in the tank after refill. The car drives at 90km/h. How many liter of gasoline were added to the car?

43

Q16. In a class of 25 students, 3 students did not submit a book report for extra credit, 8 students each submitted one book report, 6 students each submitted 2 book reports, and the rest of the students each submitted at least 3 book reports. If the average number of book reports submitted was 2, what is the maximum number of book reports that any individual student could have submitted?

Q17. At a business superstore, Step spends $\frac{1}{3}$ of his money on software, $\frac{1}{7}$ on accessories and $\frac{1}{10.5}$ on paper products. If he spends the remaining \$90 on gift cards, how much did Step spend at the business store?

$$\frac{1}{3} + \frac{1}{7} + \frac{1}{10.5} = \frac{7}{21} + \frac{3}{21} + \frac{2}{21} = \frac{12}{21}. \$90 = \frac{9}{21}. 90 \times \frac{21}{9} = 210.$$

Q18. The function $f(x)$ is equal to the square of a number lessened by 5. The function $g(x)$ is equal to a number tripled. What is $f(g(2))$?

$$f(x) = x^2 - 5$$

$$g(x) = 3x \rightarrow g(2) = 6$$

$$f(6) = 36 - 5 = 31$$

Q19. Alia bought candy for everybody in the class. She has 90 candy. If she gives $\frac{1}{10}$ to Tom, $\frac{1}{5}$ to Clara and $\frac{7}{30}$ to Beatrice, how many candies left will she have?

$$90 \cdot \frac{1}{10} = 9$$

$$90 \cdot \frac{1}{5} = 18$$

$$90 \cdot \frac{7}{30} = 21$$

$$9 + 18 + 21 = 48$$

$$90 - 48 = 42$$

Q20. 5 children's books have an average length of 18 pages and a median length of 17 pages. If three times the length of the shortest book is one page less than the longest book, what is the longest possible length, in pages, of the longest book?

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Part 2: General Knowledge of Economics and Management 10 points - Indicative time: 30 minutes

Q21. How do you calculate a trade balance?

- (a) Import - Export
- (b) Export - Import**
- (c) Savings - Taxes
- (d) Supply - Demand

Q22. If the demand exceeds the supply:

- (a) prices will go up**
- (b) prices will go down
- (c) it is a balanced situation
- (d) the government should intervene on the demand

Q23. On the milk market, supply is given by $Q = 40P$, demand is given by $Q = 30 - 20P$.
 Q = quantity (in millions of liters) P = price. What is the balance situation on the market?

- (a) $Q = 20$ $P = 2$
- (b) $P = 1$ $Q = 40$
- (c) $P = 0,5$ $Q = 20$
- (d) $Q = 10$ $P = 1$

Q24. What is one of the results of an inflation?

- (a) prices go up
- (b) exports go down
- (c) demand goes up
- (d) the currency changes

Q25. What is the ASEAN?

- (a) A peace treaty
- (b) A free trade agreement in south-east Asia
- (c) A political cooperation between Asia and the United States
- (d) A river, on which the goods can be exchanged in Asia.

Q26. What is Japan's currency?

- (a) Euro
- (b) Dollar
- (c) Riel
- (d) Yen

Q27. What is Denmark's currency?

- (a) Danish crown
- (b) Euro
- (c) Dollar
- (d) Dinar

Q28. When one company takes over the market and leaves no space for competition, it is a situation of:

- (a) monopoly
- (b) oligopoly
- (c) dictatorship
- (d) technocracy

Q29. What is the IMF?

- (a) A corporation
- (b) A free trading agreement created after World War 2
- (c) An international organization sustaining the world's economic stability
- (d) A bank

Q30. Which of these correspond to economic production inputs?

- (a) Labour, land, investment
- (b) Capital, consumption, labour
- (c) Labour, currency, investment

(d) Capital, land, labour

Q31. Microeconomics study:

- (a) the problems of decision making for an individual or a firm
- (b) the problems of decision making for a government
- (c) the problems of decision making in a game
- (d) the problems of accounting for the spendings and incomes of a firm

Q32. What does the elasticity measure?

- (a) a variation in production
- (b) the impact of a variation in price
- (c) the speed of a variation in investment
- (d) the consequences of a variation in wealth

Q34. Which countries DO NOT partake in the ASEAN?

- (a) Singapour
- (b) Brunei
- (c) Bali
- (d) Macao

Q35. When did Cambodia join the G20?

- (a) 2000
- (b) 2017
- (c) 1983
- (d) Cambodia is not a part of the G20

Q36. What was Cambodia's GDP per capita in 2015?

- (a) 1,158 USD
- (b) 558 USD
- (c) Less than 300 USD
- (d) 2000 USD

Q37. When was founded the ASEAN?

- (a) 1947
- (b) 1967
- (c) 1987
- (d) 2007

Q38. What is the object of macroeconomics?

- (a) the study of investment
- (b) the study of behaviour and decision making in an economy as a whole.
- (c) the study of behaviour and decision making as an individual
- (d) the study of public spending

Q39. Who was John Maynard Keynes ?

- (a) a banker
- (b) an stock broker
- (c) an economist
- (d) a politician

Q40. The 'invisible hand' partly legitimates?

- (a) communism
- (b) anarchy
- (c) free trade
- (d) none of the above