

## La risposta corretta è sempre posizionata nell'alternativa A

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**1 A market-oriented company:**

- A) invests in knowledge of the customer in order to adapt its offer to the specific nature of the demand
- B) invests in research and development with the aim of manufacturing and selling the best possible product
- C) tries to influence demand by adapting it to the company's offer
- D) has the primary objective of maximising sales volume

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**2 The model that describes the evolution of a product's sales and profits throughout its lifetime is called:**

- A) product life cycle
- B) profit life cycle
- C) production time cycle
- D) selling time cycle

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**3 Which kind of strategy consists in setting a low initial price on a new product to appeal immediately to the mass market?**

- A) Penetration pricing
- B) Skimming pricing
- C) Prestige pricing
- D) Bundle pricing

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**4 The Phillips curve allows us to relate:**

- A) inflation and unemployment
- B) economic growth and wage levels
- C) interest rate and income level
- D) exchange rate and interest rate

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**5 Consider a Cartesian diagram where the income level is on the x-axis and the interest rate is on the y-axis. If an LM curve is drawn, it will have an increasing trend. An expansionary monetary policy:**

- A) will shift the LM curve to the right (a higher income level corresponds to an interest rate that remains constant)
- B) will shift the LM curve to the left (a higher interest rate corresponds to a level of income that remains constant)
- C) has no effect on the LM curve, as the LM curve can only be influenced through fiscal policy
- D) will shift the LM curve to the right (an increasing interest rate corresponds to a constant level of income)

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**6 Suppose you observe that in a certain period of time there has been an increase in the interest rate in a country. This can be caused, all other things being equal, by:**

- A) an increase in the demand for money
- B) a reduction in the demand for money
- C) an increase in the money supply
- D) a reduction in investments

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**7 An increase in production can lead to an increase in the demand for money. If the money supply is fixed, to maintain equilibrium in the money market, the interest rate must:**

- A) increase
- B) decrease
- C) remain unchanged
- D) remain less than 1%

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- 8 For an oligopoly firm, an action is a dominant strategy if it:
- A) is the best possible action, regardless of the behavior of the competitors
  - B) allows it to acquire a dominant position on the market
  - C) allows it to reduce costs
  - D) is the best possible action, given the behavior of the competitors
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- 9 Which of the following terms identifies an economic policy that aims to make a country self-sufficient and to minimize the amount of imported goods?
- A) Autarchy
  - B) Protectionism
  - C) Mercantilism
  - D) Self-determination

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10 If both partial derivatives of a function  $f(x,y)$  in  $P$  are equal to zero, then  $P$ :

- A) is certainly a stationary point
  - B) is certainly a minimum point
  - C) is certainly a saddle point
  - D) is certainly a maximum point
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11 Which if the following is not a property of inverse matrixes?

- A)  $(AB)^{(-1)} = A^{(-1)} B^{(-1)}$
  - B)  $[A^{(-1)}]^{(-1)} = A$
  - C)  $B^{(-1)} A^{(-1)} A B = I$
  - D)  $A A^{(-1)} = I$
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12 The contour lines for a paraboloid of equation  $z = x^2 + y^2$ , when they exist, are:

- A) circles
  - B) parabolas
  - C) pairs of lines
  - D) hyperbolas
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13 The contour lines for  $f(x,y) = x + y$  are:

- A) parallel lines
  - B) concentric circles
  - C) hyperbolas
  - D) parabolas
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14 The boundary of a segment  $AB$  in  $R^2$  consists of:

- A) the segment itself
- B) the two points  $A$  and  $B$
- C) the empty set
- D) all points on the segment, except  $A$  and  $B$

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15 **The cumulative distribution function of a random variable  $X$  at a value  $x$ :**

- A) gives the probability that  $X$  is below than or equal to  $x$
- B) gives the probability that  $X$  is equal to  $x$
- C) is the integral of the probability density function of  $X$
- D) gives the probability that  $X$  is above  $x$

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16 **What characteristic is sufficient to ensure that a normal probability distribution can be called a standard normal probability distribution?**

- A) Its mean value must be 0 and its standard deviation must be 1
- B) Its mean value must be 0 and its variance must be 1
- C) Its mean must be equal to its median
- D) Its integral from  $-\infty$  to  $+\infty$  must be equal to one

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17 **What is the maximum variance for a Bernoulli distribution  $B(p)$ ?**

- A)  $1/4$
- B) 1
- C)  $p$
- D)  $1-p$

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18 **When estimating the difference between the means of two samples coming from two distinct populations, which of the following statements is FALSE?**

- A) The bigger the sample numbers, the bigger the confidence interval for the difference between the means
- B) The bigger the sample standard deviations, the bigger the confidence interval for the difference between the means
- C) If the populations standard deviations are not known, the samples standard deviations can be used instead, when evaluating the confidence interval for the difference between the means
- D) The point estimate for the difference between the means of the two populations is equal to the difference between the means of the two samples

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19 **A researcher wants to evaluate whether males are, on average, more or less prone than females to experience anxiety while watching a video clip where an animal is facing a life-threatening situation in the wild. In order to do so, the researcher should:**

- A) select a random sample from both populations, evaluate their level of anxiety, compute its mean values for each of the two groups, calculate an estimate of the difference between the two means and calculate its confidence interval at the desired confidence level
- B) recruit a volunteer sample from both populations, evaluate their level of anxiety, compute its mean values for each of the two groups, calculate an estimate of the difference between the two means and calculate its confidence interval at the desired confidence level
- C) select a random sample from both populations, evaluate their level of anxiety, compute its mean values for each of the two groups, calculate an estimate of the difference between the two means and calculate its standard deviation
- D) recruit a volunteer sample from both populations, evaluate their level of anxiety, compute its mean values for each of the two groups, calculate an estimate of the difference between the two means and calculate its standard deviation