

Câu 1. Không sử dụng máy tính cầm tay, rút gọn biểu thức $A = \sqrt{2} + \sqrt{8} - \sqrt{18}$.

Câu 2. Không sử dụng máy tính cầm tay, giải phương trình $x^2 - 3x + 2 = 0$.

Câu 3. Không sử dụng máy tính cầm tay, giải hệ phương trình $\begin{cases} 2x - 3y = 3 \\ 2x + y = 7 \end{cases}$

Câu 4. Cho hàm số bậc nhất $y = 2x + m$, với m là tham số.

a. Hàm số đã cho đồng biến hay nghịch biến trên \mathbb{R} ? Vì sao?

b. Tìm giá trị của m để đồ thị hàm số đã cho đi qua điểm $A(1; 3)$.

Câu 5. Cho biểu thức $B = \frac{x}{\sqrt{x+2}} - \frac{4}{\sqrt{x}} + \frac{8}{x+2\sqrt{x}}$, với $x > 0$.

a. Rút gọn biểu thức B .

b. Tính giá trị của biểu thức B khi $x = 7 + 4\sqrt{3}$.

Câu 6. Cho hình chữ nhật có chu vi bằng 30 cm . Nếu chiều rộng tăng thêm 3 cm và chiều dài giảm đi 1 cm thì diện tích của hình chữ nhật đó sẽ tăng thêm 18 cm^2 . Tính chiều rộng và chiều dài của hình chữ nhật đã cho.

Câu 7. Cho tam giác ABC vuông tại A có đường cao AH . Biết $AH = 4\text{ cm}$ và $HC = 3\text{ cm}$. Tính độ dài các đoạn thẳng AC , BC và AB .

Câu 8. Cho tứ giác $ABCD$ nội tiếp đường tròn (O) . Gọi H là giao điểm của hai đường chéo AC và BD . Biết rằng $\widehat{ABD} = 30^\circ$, $\widehat{BDC} = 60^\circ$. Tính số đo của các cung nhỏ \widehat{AD} , \widehat{BC} và số đo của \widehat{BHC} .

Câu 9. Cho tam giác ABC vuông tại A ($AC > AB$). Trên tia BA lấy điểm D sao cho $AD = AC$. Kẻ DH vuông góc với BC tại điểm H . Gọi K là giao điểm của hai đường thẳng DH và AC . Chứng minh rằng:

a. $\widehat{DHA} = \widehat{DCA}$;

b. $AK = AB$.

Câu 10. Cho tam giác ABC ($AB > BC > AC$) có ba góc nhọn nội tiếp đường tròn (O) . Gọi điểm K là chân đường vuông góc từ điểm A đến cạnh BC và H là trực tâm của tam giác ABC . Gọi M là điểm đối xứng với điểm B qua điểm K . Gọi điểm N là giao điểm của hai đường thẳng HM và AC .

a. Chứng minh rằng bốn điểm A, H, C, M cùng thuộc một đường tròn.

b. Đường thẳng AH cắt đường tròn (O) tại điểm F ($F \neq A$). Gọi P là giao điểm của hai đường thẳng KN và BF . Chứng minh rằng $NA \cdot NC = NM \cdot FP$.

----- HẾT -----

ĐỀ CHÍNH THỨC

(Đề thi gồm có 04 trang)

Mã đề thi: 404

Họ, tên thí sinh:

Số báo danh:

Mark the letter A, B, C or D on your answer sheet to indicate the correct answer to each of the following questions.

Question 1: I _____ him since we left school.

A. see B. saw C. am seeing D. haven't seen

Question 2: She _____ this dictionary to me last Sunday.

A. has given B. gave C. will give D. gives

Question 3: The _____ from the factory could be contaminating the nearby wells.

A. unpolluted B. pollutants C. polluted D. pollute

Question 4: I think this is _____ most expensive shop in town.

A. an B. \emptyset (no article) C. the D. a

Question 5: My father _____ the gardening right now.

A. has done B. did C. is doing D. does

Question 6: He lived in Thai Nguyen some years ago, _____?

A. didn't he B. does he C. did he D. doesn't he

Question 7: She always _____ a bus to school in the morning.

A. was taking B. take C. takes D. is taking

Question 8: He wants _____ these children English.

A. to teaching B. teaching C. teach D. to teach

Question 9: The house _____ he bought was built 5 years ago.

A. who B. whose C. whom D. which

Question 10: My tooth doesn't stop hurting. I'll go and see the _____.

A. teacher B. worker C. dentist D. writer

Question 11: Are you fond _____ listening to pop music?

A. on B. of C. in D. for

Question 12: My uncle _____ his car when it started to rain.

A. washes B. washed C. has washed D. was washing

Question 13: Her parents would be happy if she _____ hard.

A. is working B. worked C. will work D. works

Mark the letter A, B, C or D on your answer sheet to indicate the word(s) CLOSEST in meaning to the underlined word(s) in each of the following questions.

Question 14: The smartphone my mother has just bought is very simple to use.

A. easy B. interesting C. difficult D. hard

Question 15: Nam looked through his notes before entering the examination room.

A. learned B. discussed C. thought over D. read quickly

Mark the letter A, B, C or D on your answer sheet to indicate the word whose underlined part differs from the other three in pronunciation in each of the following questions.

Question 16: A. theater B. these C. thin D. thick

Question 17: A. hunting B. pollute C. punctual D. funny

Question 18: A. enjoyed B. arrived C. opened D. watched

Question 19: A. headache B. mistake C. station D. account

Question 20: A. pens B. tests C. cups D. desks

Mark the letter A, B, C or D on your answer sheet to indicate the word OPPOSITE in meaning to the underlined word in each of the following questions.

Question 21: Could space tourism become affordable in the near future?

A. costly B. economical C. inexpensive D. necessary

Question 22: He began his trip to the remote area to teach poor children last Sunday.

A. peaceful B. distant C. near D. far

Mark the letter A, B, C, or D on your answer sheet to indicate the underlined part that needs correction in each of the following questions.

Question 23: Tuan doesn't have vocabulary enough, so he can't write good essays.

A. doesn't B. he C. vocabulary enough D. good essays

Question 24: John can played the piano better than his friends can.

A. better B. played C. his D. can

Question 25: If we don't protect our environment, our life would be badly affected.

A. affected B. If C. would D. protect

Mark the letter A, B, C or D on your answer sheet to indicate the sentence that best completes each of the following exchanges.

Question 26: Mary is talking to a teacher in front of a classroom.

- Mary: "Excuse me. Is this the maths class?"

- Teacher: "_____"

A. Yes, they are your maths teachers.

C. Not really. He's the man over there.

B. Yes, it is. And I'm the teacher.

D. No, he isn't here.

Question 27: David is talking to his mother.

- David: "I have a terrible cold."

- Mother: "_____"

A. Thanks so much.

C. Really? That's too bad.

B. That sounds good.

D. No, I haven't.

Read the following passage and mark the letter A, B, C, or D on your answer sheet to indicate the correct word or phrase that best fits each of the numbered blanks from 28 to 32.

A narrow rock that stands taller than the Empire State Building does not look like the most welcoming place to set up home. But that did not stop an insect which was (28) _____ to be extinct for 80 years from building its last known colony on the 562-meter tall Ball's Pyramid in the South Pacific Ocean. Scientists have discovered 24 of the creatures living around a plant on the rock. The "tree lobster" insect, which is as large as a human hand, had somehow made its camp (29) _____ the lack of food.

In 2001, Australian scientists decided to investigate claims by climbers (30) _____ tackled Ball's Pyramid that they had seen fresh droppings here. They too saw the droppings and upon returning (31) _____ dark with flashlights were stunned to discover the insect colony around the only plant on the rock. Mr. Carlie said: "It felt like (32) _____ back into the Jurassic age, when insects ruled the world."

(Adapted from Solutions (2013), Tim Falla and Paul A Davies, Oxford)

Question 28: A. accepted	B. required	C. expected	D. supposed
Question 29: A. despite	B. and	C. even	D. because
Question 30: A. when	B. whom	C. who	D. which
Question 31: A. to	B. after	C. next	D. behind
Question 32: A. stepping	B. stepped	C. to step	D. step

Read the following passage and mark the letter A, B, C, or D on your answer sheet to indicate the correct answer to each of the questions from 33 to 37.

All students here come from very difficult backgrounds; they are street children, orphans, children of war-invalids, hearing-impaired students, and young people in very poor families.

This school provides us with free training in one of these areas: Vietnamese and Asian cooking, French and European cooking, French baking and pastry, restaurant and catering services, domestic services, sewing and embroidery. After one year of training at the school, full-time jobs are found for us and we could be working in a number of hotels, restaurants, private houses, embassies, or companies throughout Vietnam.

To cover all the training costs, our school runs four businesses: a restaurant, a bakery, a catering service, and a sewing & embroidery shop. These income-generating businesses also provide an excellent opportunity for us to gain valuable practical experiences. If you ever come to Vietnam, don't miss the chance to taste delicious Vietnamese and French dishes at our restaurant.

Question 33: Which of the statements is NOT true according to the text?

- A. The students have to pay a lot of money for their training.
- B. The school sets up businesses in order to pay for its operation.
- C. After the training, the school finds jobs for the students.
- D. The school accepts students who are in difficult situation.

Question 34: Which of the following businesses is NOT done by the school?

- A. catering service
- B. tourism
- C. sewing and embroidery
- D. bakery

Question 35: The word “street children” in paragraph 1 is closest in meaning to _____.
A. orphans
C. homeless children

B. children of war-invalids
D. hearing-impaired children

Question 36: The word “us” in paragraph 2 refers to _____.
A. the students
C. the school authorities

B. the tourists
D. the school teachers

Question 37: What is the main purpose of the text?

A. To talk about the life of the students
B. To prove how successful the school becomes
C. To discuss the difficulties of the school
D. To give information about the school

Mark the letter A, B, C, or D on your answer sheet to indicate the sentence that is closest in meaning to the original one in each of the following questions.

Question 38: William installed the app successfully yesterday.

A. The app was successfully installed by William yesterday.
B. The app is successfully installed yesterday by William.
C. The app has been successfully installed by William yesterday.
D. The app was successfully installed yesterday by William.

Question 39: “I go swimming every summer,” said Patrick.

A. Patrick told to me that he goes swimming every summer.
B. Patrick said to me that I go swimming every summer.
C. Patrick said me that he went swimming every summer.
D. Patrick told me that he went swimming every summer.

Question 40: Lan plays chess better than Hoang does.

A. Hoang does not play chess as well as Lan does.
B. Lan plays chess as well as Hoang does.
C. Lan plays chess more badly than Hoang does.
D. Hoang plays chess better than Lan does.

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