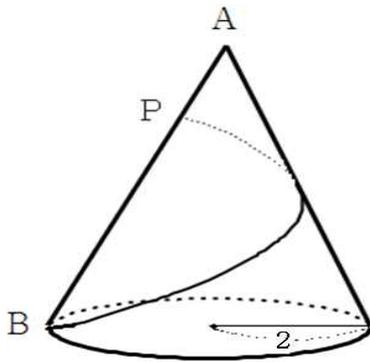


이름: _____

수험번호: _____

1. 아래의 그림과 같이 밑면인 원의 반지름의 길이가 2인 직원뿔에서 모선 AB를 6등분하는 점 중에서 점 A에 가까운 점을 P라 하자. $\overline{AB} = 6$ 일 때, 점 B에서 직원뿔의 옆면을 따라 한 바퀴 돌아 점 P까지 잇는 선의 최단길이를 구하여라.



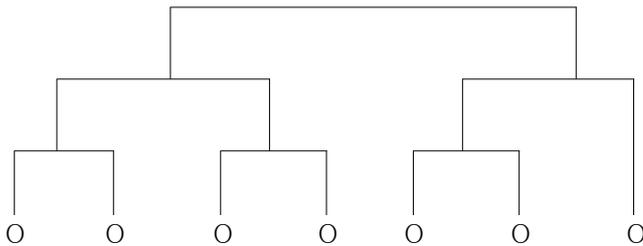
2. 친구 7명이 모여 팀을 나누어 체육대회를 하려고 한다. 7명을 세 팀으로 나누려 할 때, 세 팀을 구성하는 방법의 수를 구하시오. (7명 모두 체육대회에 참가하고, 7명 각각은 반드시 한 팀에만 소속된다.)

이름: _____

수험번호: _____

1. 삼각형 $\triangle ABC$ 에서 $2\sin(A+C)\cos(A+B) + \sin(B+C) = 0$ 이 성립할 때, $\triangle ABC$ 는 어떤 삼각형인가?

2. 7팀이 참가하여 아래 그림과 같이 토너먼트 방식으로 체육대회를 하려고 할 때, 대진표를 구성하는 방법의 수를 구하시오.



이름: _____

수험번호: _____

※ 다음 글을 읽고 물음에 답하시오.

Genius, in the popular conception, is inextricably tied up with precocity*—doing something truly creative, we're inclined to think, requires the freshness and exuberance* and energy of youth. In some creative forms, like lyric poetry, the importance of precocity has hardened into an iron law. "Poets peak young," the creativity researcher James Kaufman maintains. According to Howard Gardner, a leading authority on creativity, "Lyric poetry is a domain where talent is discovered early, burns brightly, and then peters out* at an early age."

A few years ago, an economist at the University of Chicago named David Galenson decided to find out whether this assumption about creativity was true. He looked through forty-seven major poetry anthologies* published since 1980 and counted the poems that appear most frequently. Some people, of course, would quarrel with the notion that literary merit can be quantified. But Galenson simply wanted to poll a broad cross-section of literary scholars about which poems they felt were the most important in the American canon.* The top eleven were chosen, and it turned out that they were composed at the ages of twenty-three, forty-one, forty-eight, forty, twenty-nine, thirty, thirty, twenty-eight, thirty-eight, forty-two, and fifty-nine, respectively. There is no evidence, Galenson concluded, for the notion that lyric poetry is a young person's game. Some poets do their best work at the beginning of their careers. Others do their best work decades later.

The same is true of art. Picasso, for example, was the incandescent* prodigy. His career as a serious artist began with a masterpiece, "Evocation: The Burial of Casagemas," produced at age twenty. In short order, he painted many of the greatest works of his career—including "Les Femmes d'Alger," at the age of twenty-six. Cézanne, however, didn't fit our usual ideas about genius perfectly. The array of masterpieces in the Cézanne room at the Musée d'Orsay in Paris were all painted at the end of his career. Galenson did a simple economic analysis, tabulating the prices paid at auction for paintings by Picasso and Cézanne with the ages at which they created those works. A painting done by Picasso in his mid-twenties was worth, he found, an average of four times as much as a painting done in his sixties. For Cézanne, the opposite was true. The paintings he created in his mid-sixties were valued fifteen times as highly as the paintings he created as a young man. The freshness, exuberance, and energy of youth did little for Cézanne. He was a late bloomer—and for some reason in our accounting of genius and creativity we have forgotten to make sense of the Cézannes of the world.

*precocity 조숙함 *exuberance 활력, 원기 *peter out 점차 소멸하다
*anthology 명시 선집 *canon 명작선 *incandescent 빛나는

<문제 1> 경제학자 David Galenson이 밑줄 친 @부분과 같은 분석을 통해 발견한 사실은 무엇이며, 이것이 창의성과 관련하여 시사하는 바는 무엇인지 말해보시오.

<문제 2> 밑줄 친 ⑥the Cézannes of the world의 의미가 무엇인지 말하고, 이들에게 필요한 덕목이 무엇인지 말해보시오.

이름: _____

수험번호: _____

※ 다음 글을 읽고 물음에 답하시오.

The power of stereotypes, scientists had long figured, lay in their ability to change the behavior of the person holding the stereotype. If you think women are ninnyes* ruled by hormonal swings, you don't name them CEO. But five years ago, Stanford University psychologist Claude Steele showed something else: it is the targets of a stereotype whose behavior is most powerfully affected by it. A stereotype that pervades the culture the way "ditzys* blondes" and "forgetful seniors" do makes people painfully aware of how society views them—so painfully aware, in fact, that knowledge of the stereotype can affect how well they do on intellectual and other tasks. Now, with half a decade of additional research under their belts, psychologists are discovering the power of stereotypes not only over blacks, but over women, members of ethnic minorities, and the elderly, too.

In their seminal* study, Steele and her colleagues focused on how the threat posed by stereotypes affects African Americans. They reasoned that whenever black students take on an intellectual task, like an SAT, they face the prospect of confirming widely held suspicions about their brainpower. This threat, the psychologists suspected, might interfere with performance. To test this hunch, Steele and her colleagues gave 44 Stanford undergraduates questions from the verbal part of the tough Graduate Record Exam.* One group was asked, right before the test, to indicate their year in school, age, major, and other information. The other group answered all that, as well as one final question: what is your race? The results were sobering. "Just listing their race undermined the black students' performance," says Steele, making them score significantly worse than all whites. But the performance of black students who were not explicitly reminded of their race equaled that of whites, found the scientists.

Can the pernicious* effects of stereotypes be vanquished? If no one reminds you of a negative stereotype, your performance doesn't suffer. It can actually improve if instead you think of a positive stereotype. Deception helps, too: if women are told that a difficult math test reveals no gender differences, they perform as well as men. Otherwise, women score much lower. While such manipulations may weaken the brutal power of stereotypes, at the end of the day they remain manipulations. But until stereotypes fade away, that may be the best we can hope for.

*ninny 바보, *ditzys 멍청한, *seminal 중요한, 영향력이 큰

*Graduate Record Exam 대학원 입학 자격 시험, *pernicious 유해한, 파괴적인

<문제 1> 윗글에는 밑줄 친 ㉔the pernicious effects of stereotypes를 초래하는 두 가지 유형이 언급되어 있다. 무엇인지 말해보시오.

<문제 2> 밑줄 친 ㉒부분에 나타난 필자의 견해를 밝히고 이에 대한 본인의 생각을 말해보시오.