

Bismarck
Adult Learning Center
806 North Washington

General Information

Information on the Bismarck Adult Learning Center

What do we do?

1. Prepare students from age 16 on to complete the entire GED test battery with passing scores and as high percentages as possible.
2. Help students chart a career course after completion of their GED. This means career guidance, testing, and planning along with study skills, sources of job training, employment skills, etc.
3. Assist injured workers in updating academic skills so they can return to work after they are physically ready to do so.
4. Teach people from other countries to speak, read, and write effectively in English. Once this is accomplished, students will enter either employment or further education.
5. Work with Displaced Homemakers to update academic skills and gain self confidence with a weekly support group of peers.
6. Offer specialized reading program (Read Right) for all students in need of reading improvement.
7. Assist single parents, adjudicated youth, and disadvantaged adults in updating academic skills, earning the GED, and/or work readiness skills.

What you probably don't know about us:

1. The majority of our students are from age 16-21. Most people think “adult” means someone 45 years old. In our case, it means anyone 16 years of age and older.
2. The percentage passing rate for the GED battery was 93% in Bismarck. This is a testament to the work of our students and the excellent GED instructors that we have.
3. The number one reason students want to complete the GED is to qualify for further education. They have goals of moving on with their education and entering a career field of interest. Many other people come to earn the GED and move up in a job or qualify for a job. Some students want to earn the GED to enter the military.
4. A number of medical professionals in Bismarck have spouses that attend the ALC English Language Learners (ELL) program to learn English. They hope to also be employed in different career fields once their English level is high enough to do so.
5. Injured workers update their skills at the center and prepare for the next step in returning to work or retraining.
6. Displaced Homemakers, single parents, and adjudicated youth attend our center because it is flexible enough to meet demanding schedules and responsive to their individual needs.
7. We offer morning, afternoon, and evening classes to accommodate employment, childcare, or transportation issues.
8. We operate the entire school on a little over \$200,000 per year. This is our adult education grant funding. With this budget, it is increasingly difficult to even maintain services over time.

Where the Funding Is or Isn't

1. Adult Learning Centers get \$637 from federal funds and \$276 from state funds for each student. Bismarck Public schools provides one half time instructor and in kind for support of the program.
2. Federal funding was cut 7% this year and we are anticipating reductions due to the shortfall because this is our major source of support.
3. State funding has not substantially increased in 16 years. State funding increases were \$20,000 three years ago *for the entire state* and \$100,000 *for the entire state* was given last legislative session. These small increases spread over the entire state do not allow for even the maintenance of the current program.
4. Current funding from a WIA grant has allowed the Read Right program to serve students with a half time teaching position. Next year there will likely be no WIA funds to apply for and obtain. Read Right services will end at the Adult Learning Center.
5. Projections for the future show that we can expect larger numbers of students seeking adult education services due to higher expectations of employers and training programs.
6. Past experience at the Bismarck Adult Learning Center shows extended waiting lists for services in adult education that grows every year. The length of time on the waiting list is longer and more people are unable to move forward until they get the educational services they need. This means students won't get to a job, college, further training, or the military because they need to earn their GED or update their skills.

7. In 2012, when the credits to graduate in ND go to 24, we expect larger numbers of students will drop out of high school. We will likely see this beginning when students are early in their high school career. It will be a slow building of need for adult education services as time goes on.
8. The Adult Learning Center really is the last educational stop for students. If they haven't been successful in traditional school settings and have tried to attend South Central High School, their last option is the Adult Learning Center.
9. We serve a large number of students who were previously served in special education. We have no special education services available or special education funding to support any services. We must try to meet their individual learning needs with a staff of five part time teachers none of which have special education training.

What is the GED?

1. There are five parts to the battery. Each test is passed by scoring at least 410 as a minimum and the entire battery must be a 450 average according to ND standards.
2. The battery consists of Writing Skills, Science, Social Studies, Literature, and Mathematics.
3. The GED is developed at a level where 30-40% of graduating high school seniors in the US would not meet the minimum passing scores.
4. Questions on the GED battery are classified by cognitive level using Bloom's Taxonomy of Educational Objectives. Questions are taken from the highest cognitive level (synthesis, evaluation) and lower levels (knowledge, comprehension).

5. More than 15 million people have earned a GED credential since the program began in 1942.

6. The GED battery contains the following tests:

Writing Skills has two parts:

Part One: sentence structure, organization, usage, and mechanics

Part Two: requires the writing of an essay on an assigned topic.

This essay must have well focused main points, clear organization, specific development of ideas, and demonstrate the author's control of sentence structure, punctuation, grammar, word choice, and spelling.

Social Studies:

Covers American History, World History, Civics, Government, Economics, and Geography.

Science

Covers life science, earth and space science, and physical science.

Questions address the National Science Education Content standards and focus on environmental and health topics as well.

Literature-Language Arts

Tests the reader's ability to read and understand texts similar to what is encountered in high school English classrooms. The test has five fiction and two non fiction passages. The fiction sections include portions of a play, a poem, and three pieces of prose. The non fiction passages can come from letters, biographies, newspapers, magazines, or practical texts such as manuals and forms.

Mathematics

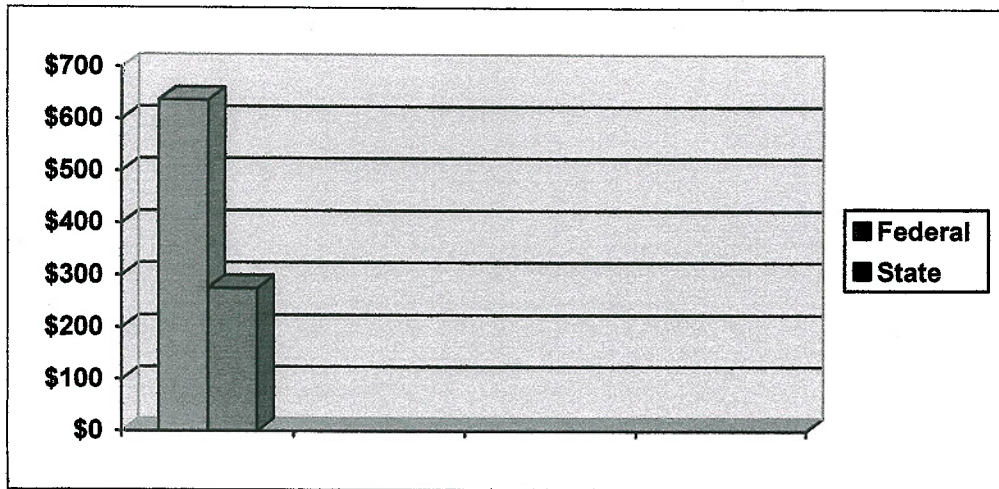
This test has two equally weighted halves. Part One allows the use of a calculator. Part Two does not allow the use of a calculator. The test focuses on four main mathematical disciplines: number operations and number sense, measurement and geometry, data analysis, probability, and statistics, and algebra, functions, and patterns.

Some Famous People That Earned the GED:

Bill Cosby, Michael J. Fox, Peter Jennings, Waylon Jennings, Mary Lou Retton, Nicholas Cage, Christian Slater, Dave Thomas, Ruth Ann Miner, Chris Rock, Danica Patrick, Mark Wahlberg, Brandon Lee, Bam Margera.



Reasons Given to Test for the GED



\$913.00 per ALC student in 2007
(\$637 in Federal support)
(\$276 in State support)

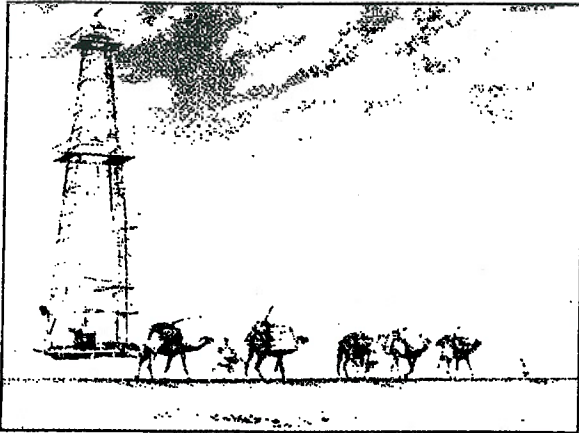
Official GED Practice Tests

- **Social Studies**
- **Literature**
- **Writing Skills**
- **Science**
- **Mathematics**
Part One (use of calculator allowed)
Part Two (no calculator allowed)

WORLD HISTORY ANALYSIS (question 16)

WORLD HISTORY EVALUATION (question 17)

Questions 16–17 refer to the photograph and passage below.



The Bedouins are Muslim Arabs who have wandered the desert areas of the Middle East since ancient times. Beginning about 1045 and continuing at a decreasing rate for several centuries, these nomads invaded northern Africa, taking over all suitable grazing land and upsetting the balanced agricultural and urban civilization of the resident Berbers, various native, non-Arab tribes. The Bedouin flocks destroyed most of the natural ground cover; by overgrazing, the flocks turned pastureland into semi-desert. Some of this balance has been restored, however, and today many Middle Eastern and North African states have tried to curtail the movement of Bedouin groups from one country to another.

Some Bedouins continue their nomadic and pastoral way of life into the twenty-first century. They live primarily on meat, milk,

and dairy products provided by their herds. However, with the rise of oil production in the 1960s and 1970s, many Bedouins have taken jobs in the oil industry. Government programs throughout the Middle East have encouraged the Bedouins to become more settled and urban. Currently, only 5 to 10 percent of Bedouins lead a fully nomadic lifestyle, but many more are seasonal nomads.

—Adapted from "Bedouins",
Microsoft Encarta Encyclopedia

16. What is the photographer most likely trying to say with this photograph?
- (1) The Bedouins are ideally suited to work in the oil industry.
 - (2) Old and new live side by side in today's Middle East.
 - (3) Camels are used to transport supplies to oil workers.
 - (4) Oil drilling is a serious environmental threat.
 - (5) Modern industry is threatening traditional lifestyles.
17. Given the information in this passage, which is the most plausible prediction?
- (1) The Bedouin way of life will persist long after the oil industry dies out.
 - (2) The northern fringe of the Sahara will start to receive more rainfall.
 - (3) The Berbers in Morocco will welcome renewed Bedouin immigration.
 - (4) The Bedouin nomadic way of life is dying out and might disappear.
 - (5) Bedouins are likely to dominate oil drilling and refining in the Middle East.

ECONOMICS ANALYSIS

Questions 19 and 20 are based on the following passage.

Most home buyers finance their purchase with a mortgage and make monthly payments that include interest. When interest rates go down, people often refinance their mortgages in order to make lower monthly payments.

Usually only about 15 percent of loan applications are for refinancing. However, the Mortgage Bankers Association reported that refinancing applications made up to 65 percent of loan applications in 1992.

19. Which of the following is implied in the passage?
- (1) Refinancing can save homeowners money.
 - (2) People apply for refinancing only when mortgage payments are unaffordable.
 - (3) Mortgage payments automatically change when interest rates change.
 - (4) Refinancing does not affect interest payments.
 - (5) Refinancing eliminates interest payments on mortgages.
20. Which of the following conclusions is supported by information in the passage?
- (1) Interest rates went down in 1992.
 - (2) Interest rates went up in 1992.
 - (3) Interest rates remained stable in 1992.
 - (4) The number of general loan applications went up in 1992.
 - (5) The number of general loan applications went down in 1992.

GOVERNMENT COMPREHENSION (question 21)

GOVERNMENT APPLICATION (question 22)

Questions 21 and 22 are based on the following cartoon.



—By Cameron Cardow/Syndicam Productions

21. Which of the following assumptions does the cartoonist make?

The "senseless shooting spree"

- (1) could easily have been prevented
- (2) is part of the American way of life
- (3) is the fault of the gun lobby
- (4) is the fault of the U.S. government
- (5) represents a fundamental civil right

22. The conflict depicted in this cartoon is most similar to which of the following conflicts?

- (1) sexual harassment vs. freedom from gender bias
- (2) pro-choice advocates vs. anti-abortion activists
- (3) private schools vs. public schools
- (4) private insurance vs. public health-care system
- (5) school segregation vs. school integration

NONFICTION ANALYSIS (question 14)

NONFICTION SYNTHESIS (question 17)

NONFICTION APPLICATION (question 19)

WHAT IS SPECIAL ABOUT THIS PLAY?

Joy is in short supply on Broadway these days. If you luck into any, you should seize and cherish it. Joy comes with the first beats of the Steppenwolf Theatre Company's "The Song of Jacob Zulu" at the Plymouth, when the rusting corrugated backdrop, which simulates a township fence, rises up and Ladysmith Black Mambazo, a nine-man a cappella group that serves here as a chorus, march into view, in their white tunics, and then down the raked stage toward us. "*Lalelani, lalelani*," they chant, in the mournful, sonorous harmonies that have made them world famous as the backup group for Paul Simon's "Graceland" album. The words of the song, and of the English ones that follow, are projected on a screen above the proscenium, so the audience can follow their South African English patois, but it hardly matters. The heart knows what they're saying, and it inexplicably lifts at their sound. We are in the presence of something pure and wholly original. Ladysmith Black Mambazo step in place, idling as their song continues

*The fire is burning.
It lights up the sky. . . .
It is taking the children
It is eating the future.*

The Zulu word for music—*sicathamiya*—comes from dancing and means "tiptoe." To Western eyes, the group's step is something between a hitch kick and a karate kick; but the movement, so beautiful to see, is neither frivolous nor aggressive. It bears the stamp of all Zulu gesture—economical, elegant, and starkly dramatic. Freedom needs a song, and Ladysmith Black Mambazo give voice and body to both the struggle and the longing.

—Excerpted from "The Forest and the Trees" by John Lahr, *The New Yorker*, April 12, 1993

14. What is the author's purpose in the first three sentences?

- (1) to outline the plot of the play
- (2) to provide background information on Zulu music
- (3) to introduce the actors cast in leading roles
- (4) to explain why the audience will enjoy the play
- (5) to describe the costumes and scenery

17. What conclusion does the reviewer reach about the significance of *The Song of Jacob Zulu*?

- (1) The chorus will become a world-famous recording group.
- (2) The play speaks to the heart of the struggle for freedom.
- (3) The experience will motivate people to learn more about the South African Zulus.
- (4) The music and dance will change traditional views of black South Africans.
- (5) The audience may react in a negative way to this new kind of musical.

19. The songs in this production were created during a time when the Blacks of South Africa were subject to the system of apartheid. This system denied them the right to vote and limited where they could live, study, and work.

Based on this information, what does the word "fire" in the song lines refer to?

- (1) justice
- (2) freedom
- (3) poverty
- (4) enslavement
- (5) illness

POETRY APPLICATION (question 36)

POETRY ANALYSIS (questions 37 and 39)

POETRY SYNTHESIS (question 40)

HOW DOES THE SPEAKER FEEL ABOUT THE POET EMILY DICKINSON?

EMILY DICKINSON

Like you, I belong to yesterday,
to the bays where
day is anchored to
wait for its hour.

5 Like me, you belong to today,
the progression of that hour
when what is unborn
begins to throb.

We are cultivators of
10 the unsayable, weavers
of singulars,¹ migrant
workers in search of
floating gardens as yet
unsown, as yet unharvested.

¹weavers of singulars: in Spanish, *singulars*
means "unique things," or "creations."

—Lucha Corpi

36. What situation would be similar to the speaker's?

- (1) a researcher discovering a long lost document
- (2) a baseball player autographing photographs for fans
- (3) an adult having a conversation with a childhood hero
- (4) two writers arguing about the meaning of a novel
- (5) a sculptor making a copy of a famous statue

37. What is meant by the line "when what is unborn/begins to throb" (lines 7–8)?

- (1) An artist is inspired.
- (2) The poet is born.
- (3) A new day begins.
- (4) The speaker meets the poet.
- (5) The poet's career begins.

39. What is the purpose of the third stanza (lines 9–14)?

- (1) to describe the speaker's search to find the poet
- (2) to praise the work of farmers and gardeners
- (3) to define the poet's search for originality
- (4) to demonstrate the difficulties in writing poetry
- (5) to make a link between the past and the present

40. What is the meaning of stanzas 1 (lines 1–4) and 2 (lines 5–8)?

- (1) Emily Dickinson and the speaker write poetry for all times.
- (2) Both poets share an interest in the sea and in children.
- (3) The speaker feels that Emily Dickinson dwells in the past.
- (4) The modern reader does not appreciate Dickinson's poetry.
- (5) Dickinson was not appreciated in her time but is enjoyed now.

Questions 10 through 17 refer to the following letter.

SmartBank

200 Broad Street
Philadelphia, PA 19116
1-800-555-9001

Ms. Asha Singh
1263 North Tilden Street
Philadelphia, PA 19105

Dear Ms. Singh:

(A)

(1) In keeping our commitment to provide you with innovative products and services we are pleased to tell you that you are pre-approved for an exceptional credit card from SmartBank. (2) With so many cards out there, why choose this one? (3) Because it matches our high standards of value and dedication to customer service with impressive benefits. (4) Just look at the advantages.

(B)

• **An introductory 1.9% fixed APR and no annual fee**

(5) You get superb value every time you use it, with a low introductory 1.9% fixed annual percentage rate on all purchases and balances. (6) Then, the savings continue with a 16.4% variable APR on all purchases and balance transfers, and there is no annual fee.

(C)

• **A credit line up to \$50,000**

(7) Maximize your savings and enjoy the financial flexibility you deserve. (8) With a generous credit line from \$5,000 to \$50,000, you'll have the resources you need to make your purchases and transfer balances from higher APR accounts to your new low introductory 1.9% fixed APR.

(D)

• **A balance transfer option you can exercise right now**

(9) It will be making sense to transfer your higher APR account balance to your low APR SmartBank card. (10) Best of all, you can do it right now, we'll take care of the paperwork for you. (11) Just complete the Balance Transfer Option on the attached Acceptance Certificate.

(E)

(12) Carry the card that reflects innovation. (13) The card reflects our heritage. (14) It also reflects quality and service. (15) It's all the card you need—and more.

Sincerely,



Frances Clarke
Consumer Credit Officer

10. Sentence 1: **In keeping our commitment to provide you with innovative products and services we are pleased to tell you that you are pre-approved for an exceptional credit card from SmartBank.**

Which correction should be made to sentence 1?

- (1) insert a comma after commitment
- (2) insert a comma after products
- (3) insert a comma after services
- (4) insert a comma after exceptional
- (5) insert a comma after card

11. Sentence 2: **With so many cards out there, why choose this one?**

Which correction should be made to sentence 2?

- (1) replace there with their
- (2) remove the comma after there
- (3) change why to Why
- (4) replace choose with chose
- (5) no correction is necessary

12. Sentence 3: **Because it matches our high standards of value and dedication to customer service with impressive benefits.**

Which is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) Because it matches
- (2) The SmartBank card matches
- (3) The many cards match
- (4) The impressive benefits matches
- (5) Answering this is because it matches

13. Sentence 5: **You get superb value every time you use it, with a low introductory 1.9% fixed annual percentage rate on all purchases and balances.**

The most effective revision of sentence 5 would include which group of words?

- (1) Delivered by the SmartBank credit card, superb
- (2) With a low introductory 1.9% fixed annual percentage rate, superb
- (3) The SmartBank card delivers superb
- (4) Superb value on all purchases and balances
- (5) Every time you use it superb

Questions 18 through 25 refer to the following memorandum.

**Rothenberg Business Systems**

Corporate Headquarters

1701 Jim Bowie Highway

Houston, TX 77005

Phone: (713) 555-1100

MEMORANDUM

To: All Employees
From: Jorge Martinez, Human Resources Director
Subject: Additional Coursework Requirement
Date: July 12, 2005

(A)

(1) The Human Resources Department requires staff to take six credit hours of academic coursework through a continuing education program every three years. (2) In addition to the credit hours requirement the classes must relate to the job assignment in which the staff member is currently working.

(B)

(3) Academic courses taken through continuing education help improves job performance. (4) Continued education assists career and personal development. (5) One's job performance improves by developing additional skills and knowledge. (6) Additional coursework, such as other forms of professional growth, enhance one's resume and future employment opportunities. (7) Taking the required six credit hours enables staff members to maintain their current company positions. (8) Acquiring more than six credit hours may contribute to a staff member's promotion or salary advancement.

(C)

(9) The most obvious benefit is that the positive reputation of the company will be maintained and furthered by the high quality of its employees, additionally, the Human Resources Department will reimburse a staff member for the financial expense of taking the required credit hours. (10) The reimbursement includes costs for tuition books, and supplies. (11) The staff member will be fully reimbursed for the costs of transportation. (12) There are a number of reasons for this requirement.

(D)

(13) After the completion of the course, the employee will submit the final paperwork to the appropriate supervisor for proper certification. (14) Employees should contact Dr. Emily Staunton, Staff Development Specialist, if any questions arise.

18. Sentence 2: **In addition to the credit hours requirement the classes must relate to the job assignment in which the staff member is currently working.**

Which correction should be made to sentence 2?

- (1) replace addition with edition
- (2) insert a comma after requirement
- (3) insert a comma after assignment
- (4) change is to are
- (5) change currently to current

19. Sentence 3: **Academic courses taken through continuing education help improves job performance.**

Which is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) help improves
- (2) are improving
- (3) help improve
- (4) having improved
- (5) was improving help

20. Sentence 5: **One's job performance improves buy developing additional skills and knowledge.**

Which correction should be made to sentence 5?

- (1) change One's to Ones
- (2) insert a comma after performance
- (3) replace buy with by
- (4) insert a comma after skills
- (5) no correction is necessary

21. Sentence 6: **Additional coursework, such as other forms of professional growth, enhance one's resume and future employment opportunities.**

Which is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) enhance
- (2) is enhancing
- (3) enhanced
- (4) enhances
- (5) have enhanced

22. Sentence 9: **The most obvious benefit is that the positive reputation of the company will be maintained and furthered by the high quality of its employees, additionally, the Human Resources Department will reimburse a staff member for the financial expense of taking the required credit hours.**

Which is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) employees, additionally,
- (2) employees. Additionally,
- (3) employees, additionally
- (4) employees additionally,
- (5) employees and additionally

23. Sentence 10: **The reimbursement includes costs for tuition books, and supplies.**

Which is the best way to write the underlined portion of this sentence? If the original is the best way, choose option (1).

- (1) tuition books,
- (2) tuition and books,
- (3) tuition may pay for books
- (4) tuition, books,
- (5) tuition. Books and

LIFE SCIENCE EVALUATION (question 7)

PHYSICAL SCIENCE APPLICATION (question 8)

LIFE SCIENCE COMPREHNSION (question 9)

7. Brittany wants to test the effect of light on plant growth. She gets three geraniums of the same size, in similar pots. She places them in the same sunny window. Brittany gives them the same amount of water. She allows Plant A to stay on the windowsill for 12 hours a day; Plant B for 6 hours a day, and Plant C for 3 hours a day. The remaining hours they spend in a dark closet. Every week Brittany measures the height of the plants. At the end of four weeks, Plant A is the tallest. She concludes that the more light a plant gets, the more it grows.

Which of the following would be the most valid criticism of Brittany's conclusion about the relationship between light and plant growth?

- (1) The geraniums were given different amounts of light each day.
 - (2) The geraniums spent varying amounts of time in the closet each day.
 - (3) The geraniums were given the same amount of water.
 - (4) Three geraniums are too small a sample on which to base such a broad conclusion.
 - (5) Geraniums are not likely to react to water in the same way as other green plants.
8. Dry cell batteries produce small amounts of electric current by means of a chemical reaction. When the supply of chemicals is used up, the battery is dead.

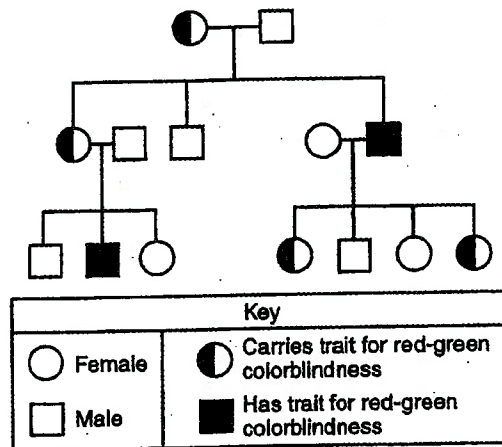
Which of the following items is best suited for being powered by electric current from a dry cell battery?

- (1) a washing machine
- (2) a toy truck
- (3) a car
- (4) a motorized wheelchair
- (5) a doorbell

Question 9 refers to the following information and diagram.

A pedigree is a type of chart used to show how a trait is inherited in one family over several generations.

PEDIGREE FOR RED-GREEN COLORBLINDNESS IN THE PHILLIPS FAMILY

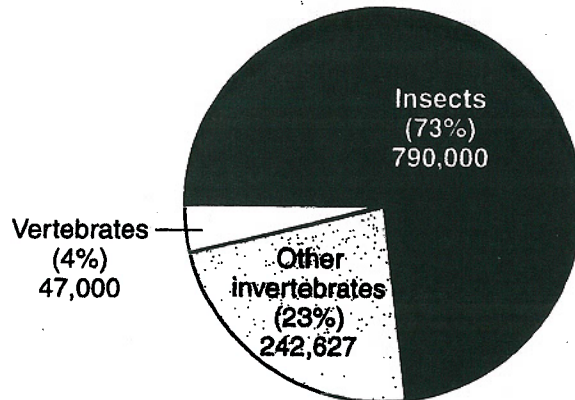


9. How many people in the third generation of the Phillips family have red-green colorblindness?

- (1) none
- (2) one
- (3) two
- (4) three
- (5) four

LIFE SCIENCE ANALYSIS
(Has to do with math)

NUMBER OF ANIMAL SPECIES



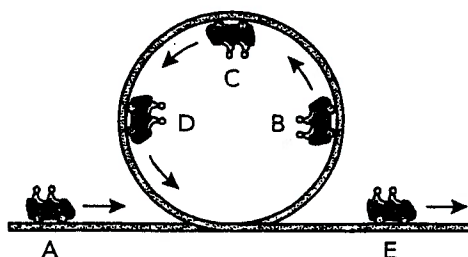
30. How does the number of invertebrate species (insects and other animals without backbones) compare with the number of vertebrate species?
- (1) There are about one-fourth as many invertebrate species as vertebrate species.
 - (2) There are about 3 times as many invertebrate species as vertebrate species.
 - (3) There are about 4 times as many invertebrate species as vertebrate species.
 - (4) There are about 10 times as many invertebrate species as vertebrate species.
 - (5) There are about 24 times as many invertebrate species as vertebrate species.

PHYSICAL SCIENCE

12. Ancient alchemists used a process called calcination to convert limestone (CaCO_3) into lime (CaO). The same process, which is simply the controlled heating of limestone, is still used today in the cement industry. By comparing the chemical formulas of limestone and lime, determine the gas that is given off during calcination.

- (1) O_2
- (2) CO
- (3) CO_2
- (4) C_2O
- (5) C_2

13. A new roller coaster in an amusement park travels in a loop as shown in the illustration below.



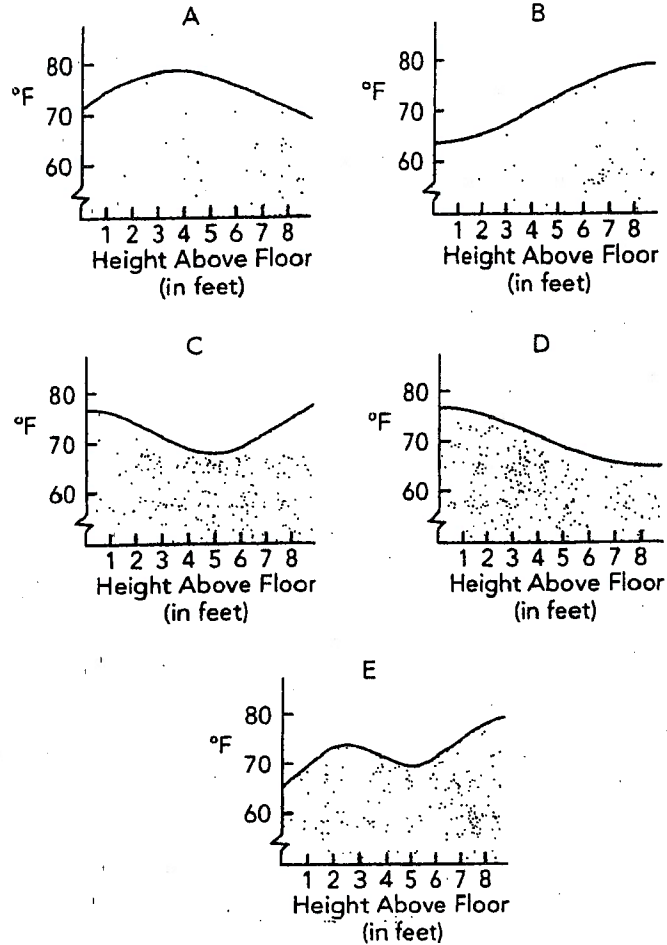
In which of the five indicated positions is the potential energy (stored energy) of the passenger car the greatest?

- (1) A
- (2) B
- (3) C
- (4) D
- (5) E

EARTH SCIENCE

Question 15 refers to the following graphs.

Each graph below shows the air temperature taken at various heights in a room.



15. Remembering that warm air tends to rise above cold air, which graph most likely represents the temperature readings taken in a room in which the doors and windows are closed?

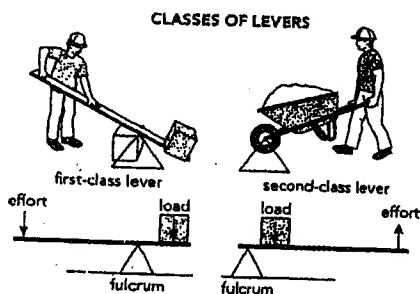
- (1) A
- (2) B
- (3) C
- (4) D
- (5) E

PHYSICAL SCIENCE

Questions 27 and 28 refer to the passage and diagrams below.

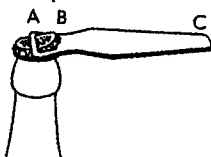
A lever is a simple tool that is used to help a person do some types of work. As shown in the diagrams below, a lever is a rigid bar that is free to rotate about a fixed point called the fulcrum. The fulcrum is the only part of the lever that doesn't move. The object to be moved is called the load. The position on the lever where the person applies force (pushes or lifts) is called the effort.

Depending on the relative positions of the fulcrum, load, and effort, each lever is placed in one of three classes. The first two classes of levers are shown below.

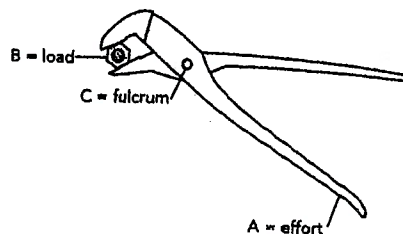


27. A bottle opener is a familiar lever used to pry the cap off a bottle. Referring to the definitions in the passage and to the diagrams, how is the bottle opener pictured below classified?

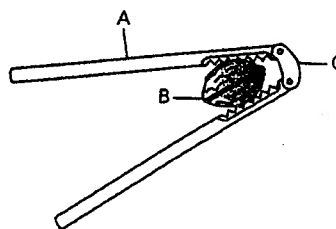
- (1) first-class lever, with fulcrum at point A
- (2) second-class lever, with fulcrum at point A
- (3) second-class lever, with fulcrum at point C
- (4) first-class lever, with fulcrum at point B
- (5) second-class lever, with fulcrum at point B



28. A double lever is a tool made by combining two levers of the same class. For example, the pair of pliers shown below is a double lever. Notice that in a double lever, the object on which work is performed is considered the load. In the pliers, for example, the gripped nut is the load in the nutcracker.



The nutcracker below is also a double lever. Which of the following correctly identifies the effort, fulcrum, and load?

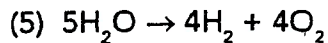
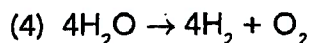
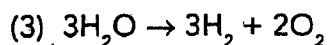
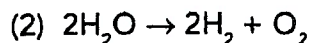
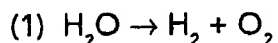


- (1) A = effort, B = fulcrum, C = load
- (2) A = fulcrum, B = effort, C = load
- (3) A = load, B = fulcrum, C = effort
- (4) A = fulcrum, B = load, C = effort
- (5) A = effort, B = load, C = fulcrum

PHYSICAL SCIENCE

28. *Electrolysis* is the use of an electric current to break down a substance into its component molecules. Electrolysis can be used to break down water (H_2O) into oxygen (O_2) and hydrogen (H_2).

Remembering that the number of atoms of each element must be the same on both sides of a reaction equation, decide which equation below correctly describes the electrolysis of water.



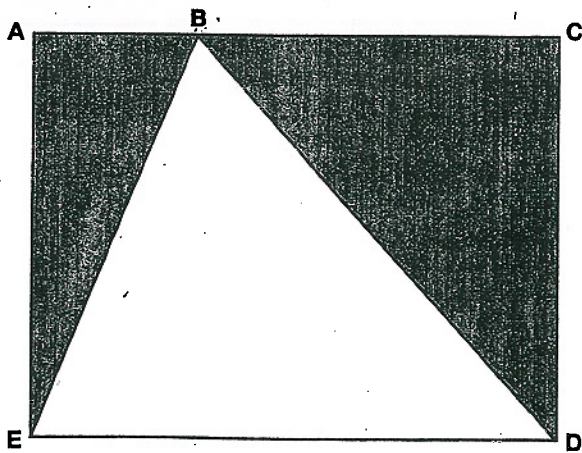
Directions: You will have 23 minutes to complete questions 1–13. You may use your calculator with these questions only. Choose the one best answer to each question.

1. Janet's gross weekly salary is \$800, but 30% is withheld for taxes and other deductions. She sets aside \$275 from her take-home pay each week for her bills. Janet budgets $\frac{1}{3}$ of the remainder for miscellaneous expenses, and she puts the rest in her savings account.

How much per week does Janet budget for miscellaneous expenses?

- (1) \$ 35
- (2) \$ 95
- (3) \$190
- (4) \$240
- (5) \$285

2. In rectangle ACDE below, $AB = 5$ cm, $BC = 10$ cm, and $BE = 13$ cm.



What is the total **SHADED** area in square centimeters?

- (1) 30
- (2) 60
- (3) 90
- (4) 120
- (5) 180

3. To determine how long batteries were likely to last while operating an electric toy, 5 of the toys were selected at random. Fresh batteries were inserted, and the toys were turned on. The times, in hours, that the batteries ran the toys were: 6.25, 8.80, 7.45, 9.50, and 8.40.

What is the mean (average) number of hours that the batteries ran the toys?

PLEASE DO NOT WRITE IN THIS TEST BOOKLET.

Mark your answer in the circles in the grid on your answer sheet.

4. The time in New York City is 3 hours ahead of the time in Los Angeles, and the distance between the cities is 2790 miles. A plane left New York City at 9:15 A.M. and arrived in Los Angeles at 11:15 A.M. local time.

At what average speed, in miles per hour, did the plane travel during the trip?

PLEASE DO NOT WRITE IN THIS TEST BOOKLET.

Mark your answer in the circles in the grid on your answer sheet.

Questions 5 and 6 refer to the information and table below.

The table below shows what it would have cost in other years to purchase the same goods valued at \$1 in 1913.

**What Goods Valued at \$1 in 1913
Cost in Other Years**

Year	Cost That Year
1913	\$1
1920	\$2.02
1930	\$1.69
1940	\$1.41
1950	\$2.43
1960	\$2.99
1970	\$3.92
1980	\$8.32
1990	\$13.20
2000	\$17.39

5. Based on the table, in which ten-year period did the cost of goods increase by the greatest amount?

- (1) 1950–1960
- (2) 1960–1970
- (3) 1970–1980
- (4) 1980–1990
- (5) 1990–2000

6. How much would it have cost in 1980 to purchase goods that cost \$5.50 in 1913?

- (1) \$72.60
- (2) \$45.76
- (3) \$21.56
- (4) \$13.82
- (5) \$ 5.50

7. The height of a hot-air balloon was measured at different times as the balloon descended. A record of the heights and times is shown in the table below.

Record of Balloon Descent

Time (t) in minutes	1	2	3	4
Height (h) in meters	76	64	44	16

Based on the table, which of the following equations expresses the relationship between h and t ?

- (1) $h = 60 + 16t$
- (2) $h = 70 + 6t$
- (3) $h = 80 - 4t$
- (4) $h = 80 - 4t^2$
- (5) $h = 90 - 14t^2$

8. In January, the Carlton family purchased a condominium for \$100,000. By the end of the year, the condo was worth 10% more than at the beginning of the year.

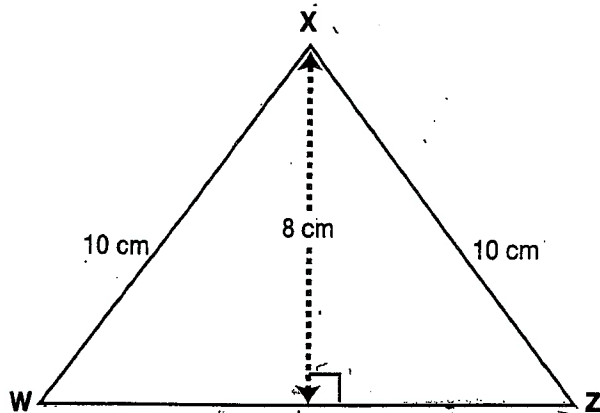
If the same rate of increase in value continues for a second year, what would be the value of the condo at the end of the second year?

- (1) \$102,000
- (2) \$110,000
- (3) \$112,000
- (4) \$120,000
- (5) \$121,000

9. If $x^2 = 49$, then $3(x - 5)$ could equal which one of the following numbers?

(1) 6
(2) 9
(3) 17
(4) 27
(5) 81

10. The area of triangle WXZ in the diagram below is 48 cm^2 .



What is the perimeter, in centimeters, of triangle WXZ?

PLEASE DO NOT WRITE IN THIS TEST BOOKLET.

Mark your answer in the circles in the grid on your answer sheet.

11. The time, in years, that it takes an amount of money to double when invested at a simple interest rate can be approximated by dividing 0.72 by the interest rate expressed as a decimal.

Approximately how many years would it take an investment of \$1000 to be worth \$2000 if the money were invested at a simple interest rate of 4%?

(1) 3
(2) 4
(3) 8
(4) 12
(5) 18

12. Three cans of soup and one box of crackers cost a total of \$4.05. Two cans of the same kind of soup and one box of the same kind of crackers cost a total of \$3.20.

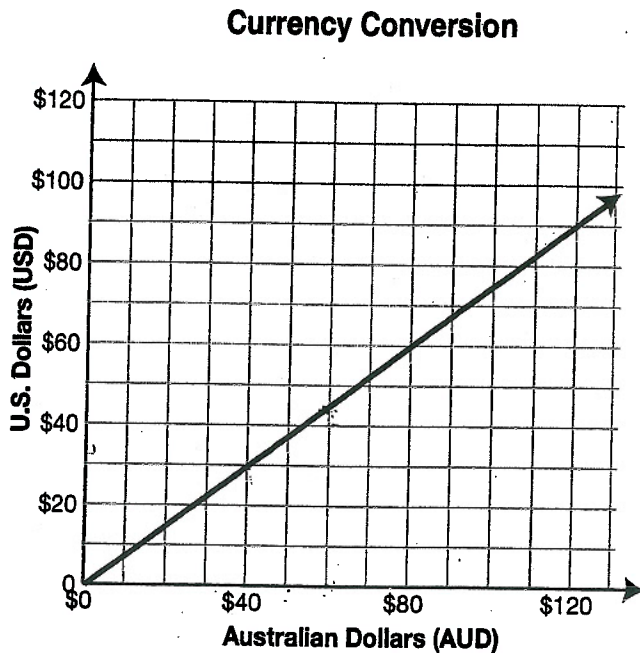
What is the cost of one can of soup?

(1) \$0.65
(2) \$0.85
(3) \$1.10
(4) \$1.50
(5) Not enough information is given.

Directions: You will have 22 minutes to complete questions 14–25. You may **NOT** use a calculator with these questions. Choose the one best answer to each question.

Question 14 refers to the information and graph below.

The graph below shows a recent conversion rate between Australian dollars (AUD) and U.S. dollars (USD).



15. The heights of four children at age 10 are shown in the table below.

Heights at Age 10

Child	Height (inches)
Adelle	51
Emilio	52
Charlie	53
Kaori	56

The children's heights were measured again at age 15. Which child's height at age 15 was equal to the mean of their heights at that age?

- (1) Adelle
- (2) Emilio
- (3) Charlie
- (4) Kaori
- (5) Not enough information is given.

14. Clare exchanged \$60 AUD for USD at the rate shown in the graph. How much, in USD, did Clare receive?

- (1) \$30
- (2) \$45
- (3) \$55
- (4) \$70
- (5) \$80

16. Applicants for an advertised position are required to take a 30-question multiple-choice test. The applicant earns 5 points for each correct answer and loses one point for each incorrect answer.

Anatoli answered all 30 questions on the test and received a score of 120. How many questions did he answer correctly?

- (1) 5
- (2) 10
- (3) 15
- (4) 25
- (5) 30

17. Angelina worked more than Barry, and Caroline worked less than Barry. If Caroline did the same amount of work as Donald, then which of the following statements is true?

Compared to Donald,

- (1) Angelina worked more
- (2) Angelina did the same amount of work
- (3) Angelina worked less
- (4) Barry did the same amount of work
- (5) Barry worked less

18. Water is pumped into an empty tank at a constant rate. After 2 minutes, the tank contains 400 gallons. After 5 minutes, the tank is full.

How many gallons of water does the full tank hold?

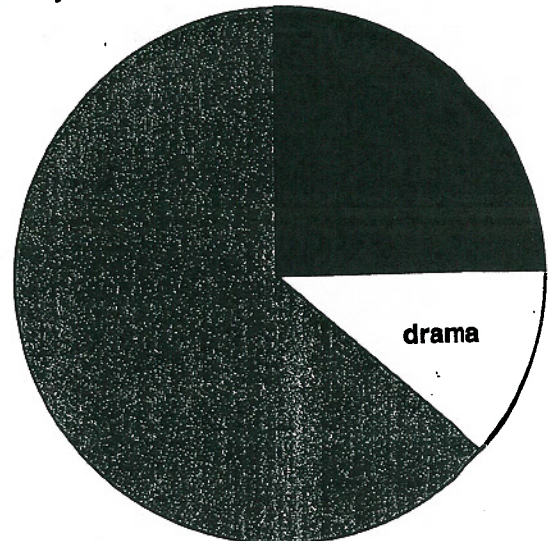
PLEASE DO NOT WRITE IN THIS TEST BOOKLET.

Mark your answer in the circles in the grid on your answer sheet.

Questions 19 and 20 refer to the information and graph below.

The graph below summarizes the results of a survey in which people were asked which of three types of television shows they watch most often: comedy, drama, or sports.

Survey Results about Most-Watched TV Shows



19. Based on the graph, approximately what percent of the people surveyed watch comedy shows most often?

- (1) 85%
- (2) 65%
- (3) 55%
- (4) 50%
- (5) 40%

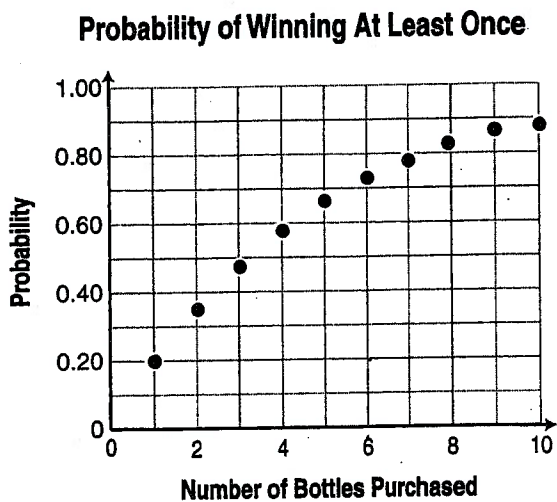
20. If 300 people were surveyed, approximately how many watch sports shows most often?

- (1) 25
- (2) 50
- (3) 65
- (4) 75
- (5) 85

Mathematics, Part II

Question 21 refers to the following information and graph.

If a randomly selected soft drink bottle is purchased, the probability that it will win a prize during a promotional campaign is 0.20. The graph below shows the probability of a consumer's winning at least one prize based on the number of bottles purchased.

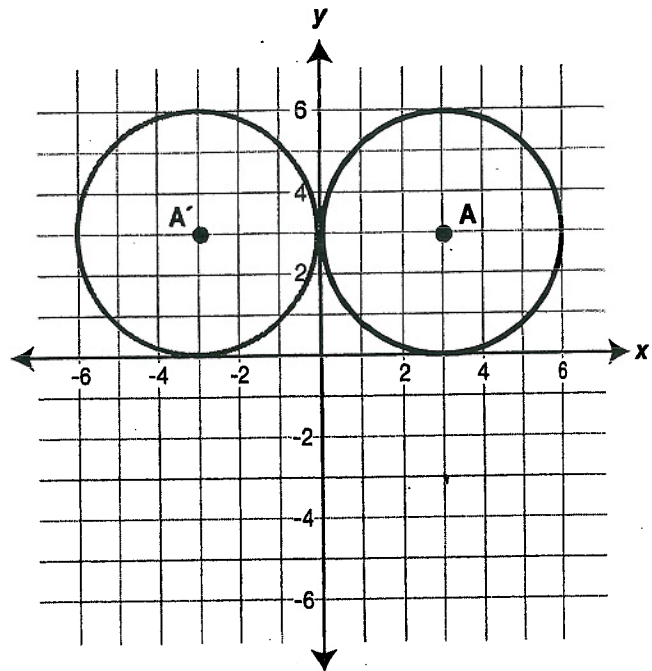


21. If 6 randomly selected bottles are purchased, what is the approximate probability of a consumer's winning at least one prize?

- (1) 0.64
- (2) 0.67
- (3) 0.74
- (4) 0.79
- (5) 0.83

Question 22 refers to the following information and diagram below.

Point A is the center of the circle at the right in the diagram below. When circle A and its center are reflected in the y-axis, the new locations are shown by the circle at the left and point A'.



22. If circle A and its center were reflected in the x-axis, what would be the new location of point A?

DO NOT MARK YOUR ANSWER ON THE GRAPH ABOVE.

Mark your answer on the coordinate plane grid on your answer sheet.

23. A roofer charges \$25 per hour for himself and \$15 per hour for his assistant. On a recent job, the assistant worked 2 hours less than the roofer, and the total charge for labor was \$290.

Let r be the number of hours that the roofer worked. Which of the following equations can be used to find r ?

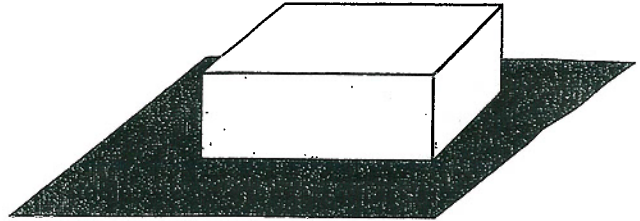
- (1) $25r + 15r = 290$
- (2) $25(r + 2) + 15r = 290$
- (3) $25r + 15(r + 2) = 290$
- (4) $25(r - 2) + 15r = 290$
- (5) $25r + 15(r - 2) = 290$

24. A linear function is represented by $f(x) = 2x + 7$.

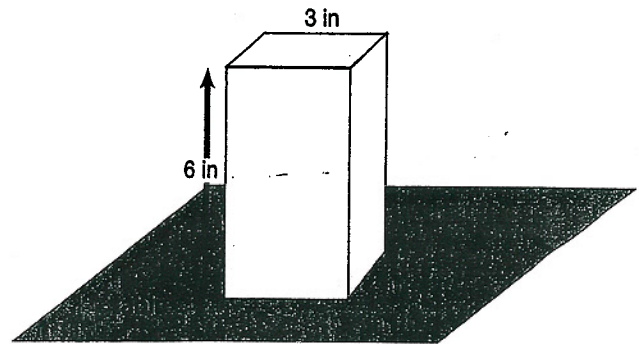
The graph of which of the following functions would be parallel to that of the function above?

- (1) $f(x) = 2x - 7$
- (2) $f(x) = x + 7$
- (3) $f(x) = x - 7$
- (4) $f(x) = -\frac{1}{2}x + 7$
- (5) $f(x) = -\frac{1}{2}x - 7$

25. A rectangular water tank was placed on a table, as shown below. Water was poured into the tank until the tank was filled to a depth of 1 inch. The tank was then sealed shut.



The tank was then turned on its end and rested on the table as shown below.



What was the depth of the water, in inches, when the tank was turned on its end?

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5