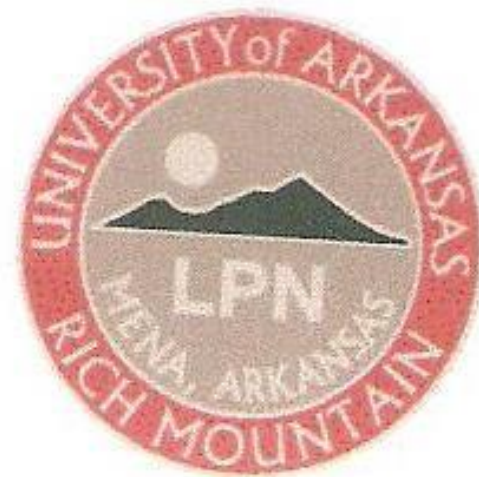




Practical Nursing  
Program

Application Information  
2023-2024



## UNIVERSITY OF ARKANSAS RICH MOUNTAIN PRACTICAL NURSING PROGRAM

The Practical Nursing Program is an eleven-month program that combines classroom instruction with clinical experience. Students successfully completing the Practical Nursing Program are awarded a Technical Certificate. After graduation, students may apply to take the National Council Licensure Examination for Practical Nursing (NCLEX-PN). Persons convicted of a crime may not be eligible to take the NCLEX-PN for licensure as a practical nurse. The Practical Nursing Program has been granted full approval by the Arkansas State Board of Nursing.

### APPLICATION FOR LICENSURE

The Arkansas State Board of Nursing application for licensure requires appropriate documentation, a written response to specific items, and a Criminal Background Check by the Arkansas State Police and FBI. Any student who has been convicted of a crime may be ineligible to take the NCLEX-PN. The following are questions requiring a response on the Practical Nurse Examination Application:

1. Have you ever had a nursing license, certificate or registration encumbered (revoked, suspended, placed on probation or reprimanded) or voluntarily surrendered in any state or jurisdiction?
2. Have you ever been convicted of a crime?  
(If yes, please include a copy of the court docket, plea agreement, or conviction papers, and evidence that fines, restitution are paid)  
**Please note: With the exception of DUI, traffic violations DO NOT constitute a crime.**
3. Do you currently engage in drug-related behavior, including the use of mood-altering drugs/substances and/or alcohol that would affect your functional abilities to perform while working as a nurse?
4. In the last two years, have you been the subject of a chemical or alcohol dependency intervention or participated in chemical or alcohol dependency treatment/rehabilitation?

GRADUATION FROM THE PRACTICAL NURSING PROGRAM DOES NOT GUARANTEE THE GRADUATE WILL BE ALLOWED TO TAKE THE NCLEX-PN.

Please read the following section of the Arkansas Nurse Practice Act:

#### **17-87-312. Criminal background checks.**

(a)

(1) Each first-time applicant for a license issued by the Arkansas State Board of Nursing shall apply to the Identification Bureau of the Division of Arkansas State Police for a state and national criminal background check, to be conducted by the Federal Bureau of Investigation.

(2) At the time a person applies to an Arkansas nursing educational program, the program shall notify the applicant in writing of the provisions and requirements of this section.

(b) The check shall conform to the applicable federal standards and shall include the taking of fingerprints.

(c) The applicant shall sign a release of information to the board and shall be responsible to the Division of Arkansas

State Police for the payment of any fee associated with the criminal background check.

(d) Upon completion of the criminal background check, the Identification Bureau of the Division of Arkansas State Police shall forward to the board all releasable information obtained concerning the applicant.

(e) For purposes of this section, the board shall follow the licensing restrictions based on criminal records under § 17-3-102.

(f)

(1) The board may issue a nonrenewable temporary permit for licensure to a first-time applicant pending the

results of the criminal background check.

(2) The permit shall be valid for no more than six (6) months.

(g)

(1) Any information received by the board from the Identification Bureau of the Division of Arkansas State Police under this section shall not be available for examination except by:

(A) The affected applicant for licensure or his or her authorized representative; or

(B) The person whose license is subject to revocation or his or her authorized representative.

(2) No record, file, or document shall be removed from the custody of the Division of Arkansas State Police.

(h) Any information made available to the affected applicant for licensure or the person whose license is subject to revocation shall be information pertaining to that person only.

(i) Rights of privilege and confidentiality established in this section shall not extend to any document created for purposes other than this background check.

(j) The board shall adopt the necessary rules to fully implement the provisions of this section.

(k)

(1) The board may participate at the state and federal level in programs that provide notification of an arrest subsequent to an initial background check that is conducted through available governmental systems.

(2) The board may submit an applicant's fingerprints to the federal Next Generation Identification system.

(3) The fingerprints may be searched by future submissions to the Next Generation Identification system, including latent fingerprint searches.

(4) An applicant enrolled in the Next Generation Identification system is not required to re-fingerprint when a subsequent request for a state or federal criminal history background check is required if:

(A) A legible set of the applicant's fingerprints is obtained when the applicant enrolls in the Next Generation Identification system; and

(B) The applicant is subject to the Rap Back service of the Next Generation Identification system.

(l) The Identification Bureau of the Division of Arkansas State Police and the Federal Bureau of Investigation may maintain fingerprints in the Integrated Automated Fingerprint Identification System.

History

Acts 1999, No. 1208, § 4; 2001, No. 303, §§ 2-4; 2003, No. 103, §§ 1, 2; 2003, No. 1087, § 15; 2003, No. 1386, § 1; 2003, No. 1449, § 1; 2005, No. 1923, § 2; 2011, No. 570, § 121; 2013, No. 302, § 1; 2015, No. 1047, § 1; 2017, No. 367, §§ 17, 18; 2017, No. 492, § 1; 2017, No. 664, §§ 11, 12; 2019, No. 315, § 1542; 2019, No. 626, § 1; 2019, Act 315, No. 990, § 76.

### **17-3-102 Licensing Restrictions Based on Criminal Records**

(a) An individual is not eligible to receive or hold a license issued by a licensing entity if that individual has pleaded guilty or nolo contendere to or been found guilty of any of the following offenses by any court in the State of Arkansas or of any similar offense by a court in another state or of any similar offense by a federal court, unless the conviction was lawfully sealed under the Comprehensive Criminal Record Sealing Act of 2013, § 16-90-1401 et seq., or otherwise previously sealed, pardoned or expunged under prior law:

(1) Capital murder as prohibited in § 5-10-101;

(2) Murder in the first degree and second degree as prohibited in §§ 5-10-102 and 5-10-103;

(3) Manslaughter as prohibited in § 5-10-104;

(4) Negligent homicide as prohibited in § 5-10-105;

(5) Kidnapping as prohibited in § 5-11-102;

(6) False imprisonment in the first degree as prohibited in § 5-11-103;

(7) Permanent detention or restraint as prohibited in § 5-11-106;

(8) Robbery as prohibited in § 5-12-102;

(9) Aggravated robbery as prohibited in § 5-12-103;

(10) Battery in the first degree as prohibited in § 5-13-201;

(11) Aggravated assault as prohibited in § 5-13-204;

(12) Introduction of a controlled substance into the body of another person as prohibited in § 5-13-210;

(13) Aggravated assault upon a law enforcement officer or an employee of a correctional facility as prohibited in § 5-13-211, if a Class Y felony;

(14) Terroristic threatening in the first degree as prohibited in § 5-13-301;

- (15) Rape as prohibited in § 5-14-103;
- (16) Sexual indecency with a child as prohibited in § 5-14-110;
- (17) Sexual extortion as prohibited in § 5-14-113;
- (18) Sexual assault in the first degree, second degree, third degree, and fourth degree as prohibited in §§ 5-14-124 — 5-14-127;
- (19) Incest as prohibited in § 5-26-202;
- (20) Offenses against the family as prohibited in §§ 5-26-303 — 5-26-306;
- (21) Endangering the welfare of an incompetent person in the first degree, as prohibited in § 5-27- 201;
- (22) Endangering the welfare of a minor in the first degree as prohibited in § 5-27-205;
- (23) Permitting the abuse of a minor as prohibited in § 5-27- 221;
- (24) Engaging children in sexually explicit conduct for use in visual or print media, transportation of minors for prohibited sexual conduct, pandering or possessing visual or print medium depicting sexually explicit conduct involving a child, or use of a child or consent to use of a child in a sexual performance by producing, directing, or promoting a sexual performance by a child, as prohibited in §§ 5-27-303 — 5-27-305, 5-27-402, and 5-27-403;
- (25) Computer child pornography as prohibited in § 5-27-603;
- (26) Computer exploitation of a child in the first degree as prohibited in § 5-27-605;
- (27) Felony adult abuse as prohibited in § 5-28-103;
- (28) Theft of property as prohibited in § 5-36-103;
- (29) Theft by receiving as prohibited in § 5-36-106;
- (30) Arson as prohibited in § 5-38-301;
- (31) Burglary as prohibited in § 5-39-201;
- (32) Felony violation of the Uniform Controlled Substances Act, §§ 5-64-101 — 5-64- 510, as prohibited in the former § 5-64-401, and §§ 5-64- 419 — 5-64-442;
- (33) Promotion of prostitution in the first degree as prohibited in § 5-70-104;
- (34) Stalking as prohibited in § 5-71-229;
- (35) Criminal attempt, criminal complicity, criminal solicitation, or criminal conspiracy, as prohibited in §§ 5-3-201, 5-3-202, 5-3-301, and 5-3-401, to commit any of the offenses listed in this subsection; (36) All other crimes referenced in this title.

(b)

(1) If an individual has been convicted of a crime listed in subsection (a) of this section, a licensing entity may waive disqualification or revocation of a license based on the conviction if a request for a waiver is made by:

- (A) An affected applicant for a license; or
- (B) The individual holding a license subject to revocation.

(2) A basis upon which a waiver may be granted includes without limitation:

- (A) The age at which the offense was committed;
- (B) The circumstances surrounding the offense;
- (C) The length of time since the offense was committed;
- (D) Subsequent work history since the offense was committed;
- (E) Employment references since the offense was committed;
- (F) Character references since the offense was committed;
- (G) Relevance of the offense to the occupational license; and
- (H) Other evidence demonstrating that licensure of the applicant does not pose a threat to the health or safety of the public.

(c) If an individual has a valid criminal conviction for an offense that could disqualify the individual from receiving a license, the disqualification shall not be considered for more than five (5) years from the date of conviction or incarceration or on which probation ends, whichever date is the latest, if the individual:

- (A) Was not convicted for committing a violent or sexual offense; and
- (B) Has not been convicted of any other offense during the five-year disqualification period.

(d) A licensing entity shall not, as a basis upon which a license may be granted or denied:

- (1) Use vague or generic terms, including without limitation the phrase "moral turpitude" and "good character"; or
- (2) Consider arrests without a subsequent conviction.

(e) Due to the serious nature of the offenses, the following shall result in permanent disqualification for licensure:

- (1) Capital murder as prohibited in § 5-10-101;
- (2) Murder in the first degree as prohibited in § 5-10-102 and murder in the second degree as prohibited in § 5-10-103;
- (3) Kidnapping as prohibited in § 5-11-102;

- (4) Aggravated assault upon a law enforcement officer or an employee of a correctional facility as prohibited in § 513-211, if a Class Y felony;
  - (5) Rape as prohibited in § 5-14-103;
  - (6) Sexual extortion as prohibited in § 5-14-113;
  - (7) Sexual assault in the first degree as prohibited in § 5-14-124 and sexual assault in the second degree as prohibited in § 5-14-125;
  - (8) Incest as prohibited in § 5-26-202;
  - (9) Endangering the welfare of an incompetent person in the first degree as prohibited in § 5-27-201;
  - (10) Endangering the welfare of a minor in the first degree as prohibited in § 5-27-205; (11) Adult abuse that constitutes a felony as prohibited in § 5-28-103; and
  - (12) Arson as prohibited in § 5-38-301.
- (f) This chapter does not preclude a licensing entity from taking emergency action against a licensee as authorized under § 25-15-211 for the sake of public health, safety, or welfare.
- (g) The permanent disqualification for an offense listed in subsection (e) of this section does not apply to an individual who holds a valid license on the effective date of this chapter.
- (1) An individual who holds a valid license on July 24, 2019;
  - (2) An individual who holds a valid license on or before July 24, 2019, but failed to renew his or her license for any reason; or
  - (3) An individual who was a student on or before July 24, 2019, in a professional or occupational school, program, or training in pursuit of an occupational license and would have been qualified to hold an occupational license on or before July 24, 2019.
- (h) This section does not apply to licensure or certification:
- (1) Of professions not governed by this title;
  - (2) Of polygraph examiners and voice stress analysis examiners under § 17-39-101 et seq.;
  - (3) Of private investigators and private security agencies under the Private Security Agency, Private Investigator, and School Security Licensing and Credentialing Act, § 17-40-101 et seq.; or
  - (4) Of body artists under § 17-26-601 et seq.

## Admission Criteria

Students must apply in person and provide the following:

Submit to the **Admissions Office**:

1. UA Rich Mountain Application for Admission
2. High School Transcript or official proof of GED
3. College Transcripts from all colleges attended
4. Proof of Measles/Rubella Immunization (if born after January 1, 1957)
5. ACT, COMPASS or ACCUPLACER scores (previous scores may be used or ASSET or COMPASS may be retaken)

Submit to the **Academic and Instructional Affairs Office**:

1. Practical Nursing Admission Application
2. Preadmission Exam (PAX) test results\*
3. ACT, COMPASS or ACCUPLACER scores
4. Copy of all college transcripts including UARM transcripts

Submit to the **Nursing Program Director** at registration:

1. Current American Heart Association BLS for Healthcare Providers Certification Card
2. Current TB skin test card
3. COVID-19 Vaccinations: UARM does not mandate that students who are enrolled receive a COVID-19 vaccine series (and any recommended boosters), but they are strongly encouraged to do so. However, the clinical facilities that partner with UARM and its member colleges establish their own policies, and they may require that faculty members and nursing students be fully vaccinated for COVID-19 to work in the facility or be assigned to specific areas in that facility. Therefore, students electing not to receive the COVID-19 vaccine series or boosters may not be able to complete program clinical requirements, which will result in non-progression through the program. Clinical facilities may also request information regarding COVID vaccination status for any student and faculty assigned to the site. Faculty and students who have received the COVID-19 vaccine should submit a copy for their file. All admission required immunizations must be current upon acceptance and maintained during the program. Other immunizations may be required per facility.  
Note: If the student opt out of any vaccine, they may be excluded from certain clinical experiences, based on the clinical institution's policies. This could affect the student's standing within the practicum courses if they are unable to obtain the required clinical hours.

\*The PPAX exam will be scheduled at designated times and administered by the Testing Center.. There will be a \$52.50 fee for the exam. Allow approximately 3 hours to complete.

Following the completion of the admission requirements by the **designated deadline of March 31 no later than 4:30 p.m.**, the applicant will be considered for the selection pool. An applicant's file is not complete until all admission requirements have been submitted.

It is the policy of University of Arkansas Rich Mountain not to discriminate on the basis of sex, color, religion, age, national origin, veteran, or qualified disability in educational programs, activities, admission, or employment practices.

*Important – any individual having been convicted of a crime may not be eligible to write the exam for licensure.*

All applicants to the Practical Nursing Program who have met the required admission requirements will be evaluated according to the criteria specified. Each applicant will be ranked on the basis of total points. Students will be admitted to the program until the class is full. Should 2 or more applicants receive the same number of points, the determining factor for admission will be:

1. Total points on the PAX, followed by
2. Total points on the ACCUPLACER, COMPASS or ACT, followed by
3. Total points on previous education, followed by
4. Date of completion of admission criteria.

*It is the applicant's responsibility to submit all required documents and to make all appointments and pay all fees for testing.*

#### **ADMISSION**

Students chosen for admission into the program will be notified by letter. Admission will be contingent on the student completing a criminal background check. Background checks will be reviewed by the Nursing Program Director and/or the Nursing Program Advisory Committee before final admission into the program.

#### **READMISSION**

A student who does not successfully completing the first semester must complete the application process again and compete for a position in a subsequent class.

A student who drops after successfully completing the Fall semester, may return to complete the Spring semester within one year, provided a space is available.

A student who drops after successfully completing the Fall and Spring semesters, may return to complete the Summer semester within one year, provided space is available.

A student who does not successfully complete the Spring or the Summer semester may re-enroll in that semester within one year, provided a space is available.

**A student who re-enters the program must enroll in and successfully complete all of the practical nursing courses for the semester they did not successfully complete.**

**NO STUDENT SHALL BE ALLOWED TO RE-ENTER THE PRACTICAL NURSING PROGRAM MORE THAN ONE TIME.**

#### **TRANSFER**

Students may be accepted who have completed courses at another practical nursing program within the previous year. Transcript and course descriptions will be evaluated by the program director. The student must provide an official transcript and syllabi for all practical nursing courses being transferred. The student will be required to pass skills testing for all skills which were covered in courses being transferred. The student may be required to pass written competency tests.

### **ADVANCED STANDING**

Advanced standing may be granted for previous educational experience by granting credit for specific courses through testing – i.e. instructor made examinations, practical examinations, and/or achievement tests. Approval is given by the Practical Nursing Program Director.

### **PROGRESSION**

Students must successfully complete all courses in the Fall semester before enrolling in the Spring semester and must successfully complete all courses in the Spring semester before enrolling in the Summer semester.

### **GRADUATION**

Students may be awarded a Technical Certificate and be eligible to apply to take the National Council Licensure Examination for Practical Nursing after completing the following requirements:

1. Obtaining a minimum grade of “C” on all Practical Nursing Courses.
2. Completing a minimum of 560 clock hours of theory and 768 clock hours of laboratory practice in the areas required by Arkansas State Board of Nursing.
3. Discharge all financial obligations to the college prior to graduation.
4. Complete a NCLEX-PN Review Program and a comprehensive assessment test prior to graduation.
5. Participate in graduation exercises.

### **Curriculum**

#### **FALL SEMESTER**

Nursing of the Geriatric Patient	McCourtney
Nursing of Adult Patients I	Hollin
Body Structure & Function*	Hollin
Basic Nursing Principles & Skills	McCourtney
Pharmacology I	McCourtney /Smith
Nursing Clinical I	Staff

#### **SPRING SEMESTER**

Nursing of Adult Patients II	Hollin
Pharmacology II	Smith
Nursing of Mothers & Infants	McCourtney
Nursing of Children	McCourtney
Vocational, Legal, and Ethical Concepts	Hollin
Nursing Clinical II	Staff
Mental Health	McCourtney

#### **SUMMER SEMESTER**

Nutrition in Health and Illness	McCourtney
Nursing of Adult Patients III	Hollin
Nursing Clinical III	Staff

\*Body Structure and Function may not be required if Anatomy and Physiology I and II have been taken within the last 5 years.

Students must enroll in ALL courses for each semester. If a student chooses to drop from the nursing program, ALL courses must be dropped.



UNIVERSITY OF ARKANSAS RICH MOUNTAIN PRACTICAL NURSING PROGRAM  
2022-2023 Admission Application

Applicant Name \_\_\_\_\_

Last First Middle

Mailing Address \_\_\_\_\_

Street City State Zip

Email \_\_\_\_\_

Telephone \_\_\_\_\_

Home Work

Parent/Guardian/Spouse \_\_\_\_\_

Name Phone

Social Security # \_\_\_\_\_ Date of Birth \_\_\_\_\_

DATE AND LOCATION of High School Graduation/Completion of GED \_\_\_\_\_

Date Location

PREVIOUS COLLEGES ATTENDED

College Name

\*College Credits Obtained

*\*To receive points for college credits, you must attach transcript to this form! Credits must be completed by March 31 of current year.*

EMPLOYMENT HISTORY (Include employment for past 5 years beginning with present or last employment)

Employer City, State

Dates of Employment\*

Job Responsibilities

**\*MUST LIST EXACT DATES OF EMPLOYMENT AND JOB RESP. TO BE CONSIDERED.**

REFERENCES (No relatives. At least two should be employer references)

Name

Address

Phone

Have you ever been convicted of a crime\*? Yes \_\_\_\_\_ No \_\_\_\_\_

IMPORTANT – ANY INDIVIDUAL HAVING BEEN CONVICTED OF A CRIME\* MAY NOT BE ELIGIBLE TO WRITE THE EXAM FOR LICENSURE.

*\*With the exception of DWI, traffic violations DO NOT constitute a crime.*

**Note: It is the applicant's responsibility to insure complete submission of all required application forms**

**Please write a short paragraph giving your reason(s) for choosing practical nursing as a career and your autobiographical background.**

Signature\_\_\_\_\_ Date\_\_\_\_\_

UNIVERSITY OF ARKANSAS RICH MOUNTAIN  
PRACTICAL NURSING PROGRAM

**Student Costs/Fees**  
(approximate)

	<i>Polk County Students</i>	<i>Other Arkansas Students including McCurtain and LeFlore</i>	<i>Out-of-State Students</i>
<b>TUITION (52 hr) and FEES</b>	\$7432.00	\$8160.00	\$8680.00
<b>KIT CHARGE Uniforms, Books, Lab Skills Pack</b>	\$1665.00	\$1665.00	\$1665.00
<b>LAMP &amp; PIN (Capping Ceremony)</b>	\$70.00	\$70.00	\$70.00
<b>Pre-NCLEX Assessment Test</b>	\$65.00	\$65.00	\$65.00
<b>*LICENSURE EXAMINATION FEES</b>			
*Arkansas State Board of Nursing	\$100.00	\$100.00	\$100.00
*National Council of State Boards of Nursing	\$200.00	\$200.00	\$200.00
*Background Check & Fingerprints	\$42.00	\$42.00	\$42.00
*Drug Screen	\$40.00	\$40.00	\$40.00
<b>TOTAL</b>	<b>\$9614.00</b>	<b>\$6219.00</b>	<b>\$11,523.00</b>

## LPN Program Selection Criteria

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All applicants to the Practical Nursing Program who have met the required admission requirements will be evaluated according to the following criteria. Each applicant will be ranked on the basis of total points.

Points awarded are:

Preadmission Exam (PAX)	15 points possible
ACCUPLACER, ACT, or COMPASS	9 points possible
Previous Education	4 points possible
Work Experience	4 points possible
Medical Terminology Course	1 point possible
Certified Nursing Assistant	1 point possible
<b>TOTAL POINTS POSSIBLE</b>	<b>34</b>

# NLN-PAX Pre-Admission Exam for Practical Nursing Candidates:

## What is the NLN-PAX?

The Pre-Admission Exam (PAX) was developed by the National League of Nursing (NLN) for use by nursing programs during the application process. The exam evaluates candidates' relevant knowledge and skills for placement in nursing education programs.

## What's on the NLN-PAX?

The NLN-PAX is a multiple-choice test. It covers English, reading and verbal ability, math, and science.

Verbal Ability - contains 60 questions with 40 minutes to complete this portion of the exam

Mathematics - contains 40 questions with 40 minutes to complete this portion of the exam

Science - contains 60 questions and with 40 minutes to complete this portion of the exam

Total Test Questions - 160 questions and Total Testing Time is 2 hours

## How is the NLN-PAX Administered?

The NLN-PAX is administered by the National League of Nursing in partnership with nursing schools and programs around the country. To register for an exam, you must create an account with NLN at <https://ondemand.questionmark.com/400030/ext/nlntesting/>. Once you create an account, you can choose an exam date and location.

Before you take the NLN-PAX, carefully check the policies and procedures for your particular test site. Fees and payment methods will vary by school. In addition, most schools will have specific requirements for what you will need to bring (e.g., identification, pencils) and what not to bring (e.g., cell phones).

A calculator will be provided to you for the mathematics portion of the test.

The NLN allows you to re-take the PAX. However, each school will have its own policy about which scores they will accept. Keep in mind that schools may require you to take the PAX the same year that you are applying.

## How is the NLN-PAX Scored?

You will receive a raw score, a composite score, and a percentile score. The raw score will simply show how many questions you answered correctly. The composite score is a weighted, scaled score combining your scores on all the test sections. It ranges from 0 – 200.

You will receive percentile scores for each section and for the entire test. Percentile scores allow you to compare your performance to that of other candidates. For instance, if you earn a raw score of 55 on Science with a percentile score of 91, 91 percent of other test-takers got raw scores lower than 55 on Science. According to the NLN, average scores range within the fortieth to sixteenth percentiles.

Be sure to answer every question on the test. There is no guess penalty, so if you answer a question incorrectly, it is not counted against you.

There is no set "passing" score for the NLN-PAX. Different nursing programs have their own guidelines for how they interpret your scores during the application review process. Contact your school's admissions office to learn more about how they use NLN-PAX score reports.

## PAX Practice Questions

### Verbal Skills

**1. Panda Bears**

Panda bears live in China's bamboo forests. They eat bamboo and are excellent tree climbers. New roads and railroads break the flow of the forest, isolating panda populations. This decreases the amount of food pandas can access during the year.

**Polar Bears**

Polar bears live in the Arctic and are the largest land carnivores in the world. They eat seals and walrus. As the sea gets larger from melting ice, polar bears have to travel longer distances for food. Their thick white fur provides warmth and traction for their feet on the ice. They are good swimmers.

Which of these statements BEST compares the information in both texts?

- A) A carnivore's diet depends on animals in the area.
  - B) The destruction of habitats affects food supply.
  - C) Animals must be able to move easily in their environment.
  - D) An animal's population can change its habitat
2. University of California, Berkeley, researchers decided to tackle an age-old problem: why shoelaces come untied. They recorded the shoelaces of a volunteer walking on a treadmill by attaching devices to record the acceleration, or g-force, experienced by the knot. The results were surprising. A shoelace knot experiences more g-force from a person walking than any rollercoaster can generate. However, if the person simply stomped or swung their feet—the two movements that make up a walker's stride—the g-force was not enough to undo the knots.

What is the purpose of this passage?

- A) to confirm if shoelaces always come undone
- B) to compare the force of treadmills and rollercoasters
- C) to persuade readers to tie their shoes tighter
- D) to describe the results of an experiment on shoelaces

*Select the answer that most closely matches the definition of the underlined word as it is used in the sentence*

3. The dog was dauntless in the face of danger, braving the fire to save the girl trapped inside the building.
- A) difficult
  - B) fearless
  - C) imaginative
  - D) startled

4. The bellicose dog will be sent to training school next week.
- A) misbehaved
  - B) friendly
  - C) scared
  - D) aggressive
5. The new menu rejuvenated the restaurant and made it one of the most popular spots in town.
- A) established
  - B) invigorated
  - C) improved
  - D) motivated

### **Mathematics**

1. Simplify:  $2(21 - 14) + 6 \div (-2) \times 3 - 10$
2. Simplify:  $2\frac{3}{5} + 3\frac{1}{4} - 1\frac{1}{2}$
3. Write the fraction  $\frac{7}{8}$  as a decimal.
4. Write the decimal 0.125 as a fraction.
5. At a certain factory, every 4 out of 1,000 parts made will be defective. If in a month there are 125,000 parts made, how many of these parts will be defective?
6. In a school of 650 students, 54% of the students are boys. How many students are girls?
7. If  $m = 4$ , find the value of the following expression:  $5(m - 2)^3 + 3m^2 - \frac{m}{4} - 1$
8. Expand the following expression:  $5x(x^2 - 2c + 10)$

9. Solve for x:  $2(x + 2)^2 - 2x^2 + 10 = 20$
10. Abby needs \$395 to buy a new bicycle. She has borrowed \$150 from her parents, and plans to earn the rest of the money working as a waitress. If she makes \$10 per hour, how many hours will she need to work to pay for her new bicycle?

### Science

1. Which of the following supplies blood to the lower body?
- A) superior vena cava
  - B) inferior vena cava
  - C) iliac artery
  - D) aortic arch
2. Which of the following causes a muscle strain?
- A) a lack of available energy
  - B) the inability of muscle fibers to contract
  - C) detachment of the ligament from the bone
  - D) overstretching of muscle fibers
3. Which of the following is the outermost layer of the kidney?
- A) renal cortex
  - B) renal medulla
  - C) renal pelvis
  - D) nephron
4. Which of the following is a monomer used to build carbohydrates?
- A) glucose
  - B) thymine
  - C) aspartic acid
  - D) histone
5. Which of the following processes creates daughter cells with half the number of chromosomes contained in somatic (body) cells?
- A) mitosis
  - B) meiosis
  - C) recombination
  - D) the cell cycle



6. Which of the following mutations would most likely be passed on to an organism's offspring?
- A) a mutation that prevents the production of functioning sperm cells
  - B) a mutation that causes the deterioration of nerve cells in mature adults
  - C) a mutation that does not cause any changes to the organism's phenotype
  - D) a mutation that limits the growth of bone cells in children
7. Which group on the periodic table will typically adopt a charge of +1 when forming ionic compounds?
- A) alkaline earth metals
  - B) lanthanides
  - C) halogens
  - D) alkali metals
8. A catalyst increases a reaction rate by
- A) increasing the activation energy.
  - B) increasing the concentration of the reactants
  - C) changing the relative partial pressures of the reactants
  - D) changing the reaction mechanism.
9. Which example describes an object in equilibrium?
- A) a parachutist after he jumps from an airplane
  - B) an airplane taking off
  - C) a person sitting still in a chair
  - D) a soccer ball when it is kicked
10. A pendulum with mass  $m$  is swinging back and forth. Which of the following statements about the pendulum's speed is true?
- A) The maximum speed of the mass will occur when it is closest to the ground.
  - B) The maximum speed of the mass will occur when it's farthest away from the ground.
  - C) The mass will always travel at the same speed.
  - D) the maximum speed of the mass will occur when it is halfway between its lowest and highest point.