Practical Nursing

CERTIFICATE PROGRAM

www.aacc.edu

ANNE ARUNDEL COMMUNITY COLLEGE
School of Health Sciences
Dear Prospective Practical Nursing Student,

Congratulations on considering practical nursing as a career possibility. It is both a worthwhile and challenging choice and we welcome you. Nurses are highly educated professionals who use their knowledge, skill and insight to assist people in achieving an optimal state of health.

The Anne Arundel Community College PN Program is approved by the Maryland Board of Nursing (MBON). Graduates who complete the 41-credit program are eligible to sit for the National Council Licensure Examination for Practical Nurses (NCLEX-PN). Our graduates have exceeded national and state pass rate averages during the past several years.

The Practical Nursing Program will admit students in the summer of each year. The first step in the admission process is attendance at an information session. At the session, we will review the academic requirements, admission requirements, the sequence of practical nursing courses, and the projected time commitment. We recommend new students review academic requirements and begin meeting proficiency requirements for English, arithmetic, and mathematics.

Following attendance at an information session, we recommend you see an adviser to plan sequencing of courses.

Sincerely,

Ken Armstrong, DNP, MS, RN, CNE, CNOR
Practical Nurse Program Coordinator
Assistant Professor, Department of Nursing
School of Health Sciences
Email: klarmstrong2@aacc.edu

Tammie D. Neall, MS, MT (ASCP)
Manager, Admissions and Advising
School of Health Sciences
Email: tdneall@aacc.edu
College Admission

Students who wish to complete practical nursing courses at Anne Arundel Community College should indicate the Practical Nursing Field of Study on the College Admission Application or Student Academic Program/Curriculum Change form available online and in Academic and Transfer Advising. To facilitate enrollment bring a copy of ACT, SAT, or advanced placement scores and unofficial high school/college transcripts to Advising. Application to the practical nursing course sequence is a separate process. Admission to the practical nursing curriculum does not assure students of selection into the practical nursing course sequence.

Students can apply to Anne Arundel Community College online at www.aacc.edu. Paper copies of the college application are available in the college’s Admissions office upon request.

Advising

New students should contact Academic and Transfer Advising at 410-777-2307; for advising select Option 1.
Current students should follow the instructions below:
- Log into MyAACC https://portal.aacc.edu
- Click on MENU
- Select SELF SERVICES
- Locate and click on OASIS in the Self Services Resource Links section

Students who are transferring general education requirements should have official transcripts sent directly to the college Records office. In order to facilitate evaluation of transfer credits to meet academic requirements, official transcripts from ALL previously attended institutions of higher education must be submitted in a timely manner.

In order to take prerequisite courses for this program, students must be eligible for ENG 101/ENG 101A and be eligible for general education mathematics. This will be explained in an advising session.

Address Verification

First consideration for selection will be given to candidates whose resident address is in Anne Arundel County for at least three months prior to the date the application
is submitted (address verification required). Out-of-county applicants will be reviewed only when space is available.

**Application Deadline**

Application deadline is December 15th. If the application deadline falls on a weekend, then applications will be accepted until the close of business on the next business day. This program begins in May of each year. Applications are available in June.

**Information Session**

- Attendance at an information session is required. Please call 410-777-7310 for dates and times or view the schedule by visiting [www.aacc.edu/apply-and-register/credit-application/health-science-applicants/](http://www.aacc.edu/apply-and-register/credit-application/health-science-applicants/).
- There is no cost to attend and no registration is required.

**Photo Identification**

Applicants are required to submit a photocopy of their Maryland driver’s license, a government-issued photo ID, or AACC photo ID attached to the program application.

**Satisfactory Academic Standing**

Students must have a minimum adjusted grade point average (GPA) of 2.0 at this college to be considered for selection to the Practical Nursing Program.

**English**

Students must demonstrate eligibility for ENG 101/ENG 101A.

There are a number of ways that can be used to determine English eligibility:

- Qualifying SAT/ACT scores
- Appropriate score on the English placement test
- Unweighted high school GPA (if you graduated in the last 5 years)
- Successful completion of developmental courses, if applicable
- Transfer of credits for ENG 101
- Appropriate score on an AP exam
- Appropriate score on a CLEP test
- Appropriate score on GED test

Please see an academic advisor for details and more information. Visit [https://www.aacc.edu/apply-and-register/credit-application/determine/placement/](https://www.aacc.edu/apply-and-register/credit-application/determine/placement/).
**Mathematics**

Students must demonstrate eligibility for general education mathematics.

There are a number of ways that can be used to determine general education mathematics eligibility:

- Qualifying SAT/ACT scores
- Appropriate score on the Mathematics placement test
- Unweighted high school GPA plus coursework (if you graduated in the last 5 years)
- Successful completion of developmental courses, if applicable
- Transfer of credits for general education mathematics
- Appropriate score on an AP exam
- Appropriate score on a CLEP test
- Appropriate score on GED test

Please see an academic advisor for details and more information. Visit [https://www.aacc.edu/apply-and-register/credit-application/determine/placement/](https://www.aacc.edu/apply-and-register/credit-application/determine/placement/).

**Arithmetic Placement Test**

- Students must demonstrate proficiency in arithmetic by achieving a score of 27 or better on the Arithmetic Placement Test* by the application deadline.
- All students must take this test. Only one retake of the test is allowed.
- Students receiving a score of less than 27 on the retake must enroll in MAT 005 and complete it with a grade of C or better by the end of the fall semester in which you apply. A grade of C or better in MAT 005 will meet the requirement for the Arithmetic Placement Test.
- Arithmetic Placement Test must be taken within 7 years from the date the application is submitted. Retake is allowed if test is past this timeframe. One retake is allowed after that if needed. There is no time limit on MAT 005.
- General Education Mathematics courses do not satisfy this requirement.

*Placement Tests may be taken in the Testing Center. For times and locations, call 410-777-2495. Information on CLEP is available in testing center.
Chemistry

Students must present evidence of successful completion with a grade of C or better of a chemistry course as demonstrated by one of the following by the end of the fall semester in which you apply:

- U.S. high school general chemistry (1 credit) OR
- Noncredit (CHE 011) or credit chemistry (CHE 111 or CHE 103) OR
- Transfer of credits for a credit chemistry course from other institutions of higher learning.

**NOTE:** If home schooled, the high school curriculum must be under a recognized umbrella organization with the supervision of a state-approved curriculum. AACC may require a course syllabus so that our chemistry department chair can review and approve the curriculum.

High School Graduate or Equivalency

- Official high school transcripts or official GED equivalency certificate must be submitted by the application deadline to the Health Sciences Admissions Office, FLRS 100.
- A transcript/equivalency certificate is considered official when enclosed in a sealed envelope from the institution; it must also include a graduation/completion date and a school official’s signature. A copy of a high school or GED diploma does not constitute an official document and will not be accepted.
- Your application will not be considered complete if required document is not submitted with the application or has not been previously submitted to and received by Anne Arundel Community College.

College Credit Transfer

- Applicants who have program prerequisite courses or other equivalent general education required courses completed from a nationally recognized institution must submit official transcripts with the program application for review.
- A transcript is considered official when it is enclosed in a sealed envelope from the institution; the transcript also includes a graduation date (if applicable) and a school official’s signature.
- The program application will not be considered complete if required transcripts are not submitted with the application or have not been previously submitted to and received by Anne Arundel Community College.
**International Students**

- Foreign educated students must have their college and high school transcripts evaluated by one of the following credential evaluators:
  - ECE (Educational Credential Evaluators) at [www.ece.org](http://www.ece.org)
  - WES (World Education Services) at [www.wes.org](http://www.wes.org)
  - SpanTran at [www.spantran.com](http://www.spantran.com)

- This evaluation must be done prior to evaluation by the Records office at Anne Arundel Community College. Please be advised that this process may take several weeks.

- **ALL** international students whose native language is not English must successfully pass the TOEFL (Test of English as a Foreign Language) with a minimum score of 550 (213 is the equivalent computer score and 79 is the equivalent Internet-based score) OR must have completed the ENG 101/ENG 101A and ENG 102 course sequence with grades of C or better prior to applying to the program. Anne Arundel Community College’s code for TOEFL is 5019. For more information visit [https://www.aacc.edu/apply-and-register/credit-application/international-students/toefl-score-requirement/](https://www.aacc.edu/apply-and-register/credit-application/international-students/toefl-score-requirement/).

- Valid Immigration Documentation for Non-U.S. Citizens
  - Non-U.S. Citizen applicants must submit valid immigration documentation to the AACC Admissions and Enrollment Development Office in order to complete the required college application. For assistance regarding immigration documentation needed, please call 410-777-2152. Incomplete college applications may result in non-selection of a Health Sciences program.
  - Please note: Students without a Social Security number may not be permitted at some clinical rotation sites; site availability may delay or inhibit progression in the program. An International Student Admission Specialist in the AACC Admissions and Enrollment Development Office may be able to assist international students with F-1 visa status to obtain a Social Security number through Practical Training; please contact them at 410-777-2677. For detailed information, please refer to the college catalog (available on campus or online at [http://catalog.aacc.edu/](http://catalog.aacc.edu/)).

**Additional Information**

**Readmission**

Students seeking readmission to the Practical Nursing Program must petition the director, department of nursing, in writing.
Licensure

Successful graduates of the PN Program are eligible to sit for the National Council Licensure Examination-PN (NCLEX-PN) exam. Upon successful completion of this exam, graduates will be licensed as a Licensed Practical Nurse by the Maryland Board of Nursing.

RN Program

Students completing the PN Program must have a minimum of 1 year full-time work experience as a Licensed Practical Nurse to be considered for Anne Arundel Community College’s LPN to RN Advanced Placement. Please see detailed admission requirements at http://www.aacc.edu/programs-and-courses/credit-and-degree-seekers/nursing/.

Health Manpower Shortage Program

This program may be designated as a Health Manpower Shortage Tuition Reduction Program; therefore, some residents of Maryland (see college catalog) enrolled in this program of study on the first day of the term may be eligible for in-county tuition rates for courses required for program completion.

Registration For Practical Nursing Course Sequence

Only students who have been selected to the program may register for LPN 180. Registration will occur at a mandatory orientation meeting in April.

### REQUIRED COURSES

#### Prerequisite Courses

For selection, all prerequisite course work must be completed by the end of the fall semester of the year in which you apply. Prerequisite grades must be a C or better.

<table>
<thead>
<tr>
<th>Course #</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY 111</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>MAT</td>
<td>General Education Math</td>
<td>3</td>
</tr>
<tr>
<td>- and -</td>
<td></td>
<td></td>
</tr>
<tr>
<td>♣ BIO 231</td>
<td>Human Biology 1</td>
<td>4</td>
</tr>
<tr>
<td>♣ BIO 232</td>
<td>Human Biology 2</td>
<td>4</td>
</tr>
<tr>
<td>- or -</td>
<td></td>
<td></td>
</tr>
<tr>
<td>♣# BIO 233</td>
<td>Anatomy &amp; Physiology 1</td>
<td>4</td>
</tr>
<tr>
<td>♣ BIO 234</td>
<td>Anatomy &amp; Physiology 2</td>
<td>4</td>
</tr>
</tbody>
</table>

# Fundamentals of Biology (BIO 101) is a college prerequisite for BIO 233. Therefore, it will take three semesters to complete this science sequence.

♣ Recommend completion within the past 5 years.
### Practical Nursing Course Sequence

<table>
<thead>
<tr>
<th>Term 1 (Summer)</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPN 180</td>
<td>8</td>
</tr>
<tr>
<td>Fundamentals of Practical Nursing</td>
<td></td>
</tr>
<tr>
<td>Total credit hours</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Term 2 (Fall)</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPN 193</td>
<td>10</td>
</tr>
<tr>
<td>Adult and Child Health Concepts in Practical Nursing</td>
<td></td>
</tr>
<tr>
<td>Total credit hours</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Term 3 (Spring)</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPN 194</td>
<td>9</td>
</tr>
<tr>
<td>Women, Newborns, Mental Health and Integration of Concepts in Practical Nursing</td>
<td></td>
</tr>
<tr>
<td>Total credit hours</td>
<td>9</td>
</tr>
</tbody>
</table>

- All students must receive a minimum grade of C in each practical nursing course and a mark of satisfactory in the clinical laboratory. C = 75%.
- The curriculum includes the prerequisite courses and the Practical Nursing courses.
- Students who successfully complete the 41-credit PN Program will be awarded a certificate.
- The PN Program is approved by the Maryland Board of Nursing (MBON).

### APPLICATION/SELECTION PROCESS

- Practical Nursing applications are available online and on campus in FLRS 100. Eligible students desiring entry **must** return the completed application to the School of Health Sciences office (FLRS 100) **no later than December 15th**. Completed applications received after this deadline will be rank ordered according to the date received and reviewed only if seats are available.
- Students eligible to submit applications for selection are those who have completed all the admission and academic requirements by the appropriate deadlines.
- The applications will be reviewed and students will receive a letter regarding the status of their applications.
- Selection for the class will be made in February. The PN Program begins each May and is one year long in duration.
Eligible applicants will receive a Selection Packet assigning them to one of the following categories:

**Conditional Acceptance:** Applicants who have met the academic and admission requirements and have been selected into the Practical Nursing Program. Final acceptance into the program shall be contingent upon satisfactory completion of a criminal background check, health examination record and submission of current American Heart Association Basic Life Support (BLS) CPR certification. With the selection packet, conditionally accepted students will receive the health examination record, criminal background check and CPR instructions to be completed by a designated deadline. **Conditional Acceptance** candidates who do not meet this deadline will not be considered for admission and the next person on the list will be contacted.

**Wait List:** In the event there are more qualified applicants than seats available, qualified applicants not initially conditionally accepted will be placed on the wait list in rank order and notified of selection if and when seats become available. Qualified out-of-county applicants will be placed at the end of the wait list.

- Final acceptance into the program shall be contingent upon satisfactory completion and submission of a health examination record, a criminal background check and current CPR certification card.
- No selection decisions will be communicated via telephone and/or email.

**Technical Standards**

Students conditionally accepted to the program will be required to complete the health examination record. Once a physician certifies that the candidate meets the technical standard requirement (defined below) as established by the department within the scope of practice of the profession, and the department receives and concurs with the physician’s certification, the candidate will be considered as having met the technical standard requirement.

**Qualification: Good physical and mental health.**

Admission Criteria (Technical Standards): Student must be free of contagion and possess sufficient stamina with or without reasonable accommodations, as may be required by law and mental stability to fulfill the requirements of the program and the customary requirements of the profession:

- Work for 8-12 hours performing physical tasks requiring sufficient strength and motor coordination without jeopardy to patient and student safety as, for example, bending, lifting, turning and ambulating patients.
• Perform fine movements and be able to manipulate instruments and wide variety of equipment according to established procedure and standards of speed and accuracy.
• Establish and work toward goals in a consistently responsible, realistic manner.
• Have auditory ability sufficient to monitor and assess health needs (for example: communicate verbally, in an effective manner, with patients and other personnel).
• Have visual ability sufficient for observation and assessment necessary for patient care (for example: read and process patient-related information like patient charts and requisitions).

**Criminal Background Checks and Drug Screening**

All Health Sciences students who are offered admission and/or clinical placement will be required to submit to a complete criminal background check and urine drug screen. All student applicants’ final acceptance in the program shall be contingent upon satisfactory completion of a criminal background check and of a urine drug screen.*

All letters of acceptance shall state that the acceptance is conditional and contingent on submission to a criminal background check and urine drug screen—as may be required by the program—that results in satisfactory reports. If an accepted student tests positive for an illegal or un-prescribed drug, the student shall be denied admission or terminated from any Health Sciences program.

Separate, additional criminal background checks and urine drug screens may be required by clinical sites prior to placements. Students with an unsuccessful background check or urine screening who are denied by a clinical site that is required to meet program competencies shall be dismissed from the program and their registrations shall be withdrawn from courses related to the program of study. If the student tests positive for an illegal or un-prescribed drug, the student shall be denied admission or terminated from any health sciences program even if a denied placement was not required to meet program competencies. Successful reports of criminal background checks and urine drug screens do not assure eligibility for specific clinical site placement, program completion, and/or eligibility to sit for professional licensure/board examinations.

Students are reminded that licensing boards for certain health care occupations and professions may deny, suspend, or revoke a license or may deny the individual the opportunity to sit for an examination even if the individual has completed all program course work if it is determined that an applicant has a criminal history or has been convicted of, or pleas guilty, or pleads nolo contendere or the like to a felony or other serious crime.

Successful completion of a Health Sciences program of study at Anne Arundel Community College does not guarantee licensure, the opportunity to sit for a licensure examination, certification or employment in the relevant health care occupation.
Students may be automatically denied admission or, if enrolled, dismissed from the program if they have not been truthful or have provided inaccurate information on the application or on any other form or submission. Students who have questions or concerns are encouraged to contact the Health Sciences Admissions Office at healthsciencesadmissions@aacc.edu.

* Notwithstanding the statements herein regarding urine drug screens, as of September 2010, only certain programs and clinical sites will be requiring drug screening. AACC shall inform students which programs presently require them. However, AACC, at any time, has the right, upon notice, to require any and all students in any and all programs to comply with drug screening.

PLEASE NOTE: AACC will only accept criminal background checks performed by a college approved vendor. Criminal background checks are completed online and must be paid for by the student. Information and Instructions are given to applicants once accepted into the program.

CPR

Conditionally accepted students must successfully complete the American Heart Association Basic Life Support (BLS) CPR course and upload copy of card by designated deadline. The CPR certification must be valid through graduation from the program.
The criteria used to select the Conditional Acceptance and Wait List candidates will be applied in the following order:

1. First consideration for selection will be given to candidates whose resident address is in Anne Arundel County for at least three months prior to the application deadline. The Address Verification Form is part of the application packet and must be completed in its entirety with two supporting documents. Applications received without this form and documentation will be considered incomplete and will be returned to the applicant. Questions pertaining to this form can be addressed to Melissa Mumma in the Records Office at 410-777-2721.

2. Satisfactory completion of the academic and admission requirements.

3. Students with the highest selected GPA of all prerequisites to include advanced placement scores and transfer grades. Each prerequisite grade must be a C or better. If a prerequisite course is repeated, the most recent grade is used in calculating GPA.

4. Students who attain the highest overall adjusted GPA including transfer grades.

5. Students who have the longest continuous enrollment at this college. Students who have completed all required coursework and are not currently taking classes will be considered as having continuous enrollment.

6. Final acceptance is contingent upon satisfactory completion of a criminal background check and satisfactory completion of a health examination record.

In the event that applicants are not selected and wish to be considered for the next class, they must submit a new application. A new application will void all prior applications and ranking.
Anne Arundel Community College and/or the School of Health Sciences reserves the right to revise requirements for admission into the Health Sciences programs, the selection criteria and procedures, and the required courses for programs of study as deemed necessary without prior notification.

March 2019

Notice of Nondiscrimination: AACC is an equal opportunity, affirmative action, Title IX, ADA Title 504 compliant institution. Call Disability Support Services, 410-777-2306 or Maryland Relay 711, 72 hours in advance to request most accommodations. Requests for sign language interpreters, alternative format books or assistive technology require 30 days’ notice. For information on AACC’s compliance and complaints concerning sexual assault, sexual misconduct, discrimination or harassment, contact the federal compliance officer and Title IX coordinator at 410-777-1239, complianceofficer@aacc.edu or Maryland Relay 711.
Arnold - SUN 240
Tel: 410-777-2375
Fax: 410-777-4007
testing-arnold@aacc.edu

HOURS

Monday-Thursday
8:30 a.m.-8 p.m.
Friday
8:30 a.m.-4:30 p.m.
Saturday
9 a.m.-1 p.m.

Arundel Mills - Room 112
Tel: 410-777-1915
Fax: 410-777-4009
testing-amil@aacc.edu

HOURS

Monday-Thursday
11 a.m.-7 p.m.
Friday
10 a.m.-2 p.m.
Saturday
9 a.m.-1 p.m.

Glen Burnie Town Center - Room 208
Tel: 410-777-2906
Fax: 410-777-4008
testing-gbtc@aacc.edu

HOURS

Monday
9 a.m.-5 p.m. (Noon-1 p.m. break)
Tuesday-Thursday Noon-8 p.m. (4-5 p.m. break)
Friday - Closed
Saturday 9 a.m.-1 p.m.
ACCUPLACER PREPARATION

The placement test at AACC is used to assess college level skills in mathematics, English and reading. The computerized placement test (ACCUPLACER) is offered to new students to assist AACC staff in determining course placement. This is not a college admissions test.

After the test has been completed and scored, an advisor will review the results with the student and offer suggestions for appropriate courses.

There are three types of placement tests described below:

- ACCUPLACER Placement (native English speakers).
- ESL Placement (non-native English speakers).
- Arithmetic Placement (Health Sciences and biology students only).

For additional information visit:
https://www.aacc.edu/apply-and-register/credit-application/determine-placement/accuplacer-preparation/

AACC PLACEMENT PREP GUIDE

This free resource offers general information on college admission, testing and retake options. The guide provides sample questions for the ACCUPLACER English, reading, math and ESL placement tests. You also will find sample questions for the Arithmetic Placement test.

For additional resources and to download the AACC Prep Guide visit:
https://www.aacc.edu/apply-and-register/credit-application/determine-placement/accuplacer-preparation/

ACCOMMODATION TESTING

All students requiring accommodations need to apply each semester through Disability Support Services (DSS). DSS can provide detailed information on how to receive services and additional support provided at Anne Arundel Community College. You must contact DSS before any accommodations can be provided.

All AACC testing proctors have been trained to work with students needing accommodations while taking their exams. Proctors are able to offer accommodations for extra time, minimal distraction rooms, reading and scribing to those eligible.

Students needing accommodations other than extra time must contact the testing office 48 hours in advance to schedule an appointment.
Students that are taking a certification exam through a specific vendor like Certiport, Pearson Vue, GED, or Castle Worldwide are required to contact the vendor. Each vendor has their own accommodation approval process.

For additional information visit:
https://www.aacc.edu/resources/academic-services/testing/testing-accommodations/
PRACTICE PROBLEMS FOR THE ARITHMETIC PLACEMENT TEST

The *Arithmetic Placement Test* is designed to determine whether a student has sufficient arithmetic skills.

The following problems are similar to those given on the screening test. If you take some time to practice, your score will surely be higher. The answers to the problems appear at the end of this material.

The screening test is timed (1 hour) so your practice should be for accuracy and speed. There are thirty-six problems on the test and a *score of 27 or better* is passing. **Only one retake of the test is allowed. Students who are not successful in the retake must enroll in MAT 005.**

After September 15, 2018 – Arithmetic Placement Test scores must be within 7 years from the date a Health Sciences program application is submitted. Retake is allowed if test is past this time frame. One retake is allowed after that if needed. There is no time limit on MAT 005.

**Whole Number Arithmetic:**

1. 4875  
2. 8073  
3. 38  
4. 
   
   + 1928  
   - 1584  
   x 27  
   15) 3105

**Arithmetic of Fractions:**

5. Write the lowest terms: \( \frac{30}{45} \)

6. Circle the largest fraction: \( \frac{4}{5} \) or \( \frac{7}{10} \) or \( \frac{2}{3} \)

7. Add: \( \frac{3}{2} + \frac{5}{8} \)

8. Multiply: \( \frac{2}{8} \times 16 \)

9. Divide: \( 6 \div \frac{1}{2} \)

10. Mary used \( \frac{2}{3} \) of her savings to make a down payment on a new car. If her savings were $2,400, how much did she put down?

**Decimal / Exponent Arithmetic:**

11. Write in decimal form: \( \frac{5}{8} \)

12. Add: 3.2705 + 4.02 + 13.315
13. Multiply: \(360 \times 1.2\)

14. Which number is the largest?
   \(0.0054, \ 0.001, \ 0.07, \ 1.0\)

15. \(7.5 \times 10^3\) is equal to?

16. \(7.62 \times 4.7\)

**Percents:**

17. Divide: \(360 \div 1.2\)

18. Express: \(37\%\) as a decimal

19. Express: \(0.03\) as a percent

20. Express: \(13\%\) as a fraction

21. If 40\% of the thirty patients in a certain clinic have headaches, how many have headaches?

**Ratio and Proportion:**

22. What should \(r\) be in order to have \(\frac{r}{5} = \frac{18}{30}\)?

23. If it takes 4 cups of water to fill three glasses, how many cups will be needed to fill nine of the same glasses?

24. In a rural county 350 residents signed up for the armed forces. The breakdown of numbers for each branch is found in the table below. What percent of residents signed up for the Air Force? (Round your answer to two decimal places.)

<table>
<thead>
<tr>
<th>ARMY</th>
<th>NAVY</th>
<th>AIR FORCE</th>
<th>MARINES</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>56</td>
<td>64</td>
<td>160</td>
</tr>
</tbody>
</table>

25. A farmer tries to save space by putting cows and sheep altogether in a ratio 3:4 respectively. If the farmer gets 15 cows how many sheep must have to keep the same ratio?

**Determine the value of \(X/Y\) in the following:**

26. \(3.2 = X:6\)

27. \(\frac{X}{27} = \frac{3}{5}\)

28. \(\frac{5}{7} = \frac{25}{X}\)

29. \(\frac{6}{100} = \frac{X}{100}\)

30. \(\frac{1.2}{3.5} = \frac{10}{X}\)

31. Evaluate: \(10x - 6y\), if \(x = 0.9\) and \(y = 2.5\)
   (Round your answer to two decimal places.)
**Graph Interpretation:**

A buoy is bouncing up and down on the waves. The following graph depicts its elevation over a certain period of time.

### Elevation (in)

![Graph of buoy elevation over time]

32. What is the buoy elevation at 3 seconds?

33. Referring to the graph above, what is the independent variable?

**Resources:**

1. Math Center: Lower level of Truxal Library. Math professors or tutors available (free) Monday-Thursday 9-8:30 p.m., Friday 9-4:00 p.m., Saturday 9-3:00 p.m. (limited summer hours).

2. Peer Math Tutors: Fill out application in Testing & Tutoring Center. Service is free and available throughout the year.

**Academic Support Center Information:**

Call for specific days and times:

Arnold Campus (410) 777-2495  
Arundel Center North, Glen Burnie Town Center  
(410) 777-2945  
Arundel Mills Center, Room 112  
(410) 777-1915  
Army Education Center, Fort Meade  
(410) 672-2117

There is no fee to take the placement test. Students must bring a valid photo ID and know their social security number.