Basic Math Competency Policy. All freshmen and transfer students who are entering the nursing program, including those students who are on a waiting list, must take and pass a basic math competency exam at 90% in order to progress into the sophomore spring semester of the nursing program. Students who do not achieve a successful score of 90% on the basic math competency exam will be required to take and pass a math enrichment course with a grade point average of 3.2 or higher. Students who do not meet the aforementioned criteria will be dismissed from the nursing program. Registered Nurse students are exempt from this policy.


Practice Exam. A proficient understanding of basic math concepts and skills is expected of all nursing students to safely calculate and administer patient medications as well as educate patients and families on how to correctly measure their medications. In addition, other math calculations involve the intake and output of fluids, body mass indices, wound size, intravenous fluids, and the nutritional composition of foods to name a few. Basic math concepts and skills include arithmetic, rounding, fractions, decimals, ratios and proportions, percents, dosage calculations and conversions of both metric and household units as well as correctly reading the exam questions.

The following practice exam is an example of some of the questions you can expect to see on the basic math competency exam. Please note the basic math competency exam has a total of 20 questions, thus to achieve a passing score of 90%, you must answer 18 out of the 20 questions correctly. This grade may seem rather high to you, however please remember that it translates as a 10% error or potentially, one in every ten patients will receive the wrong dose of medication. The primary purpose of administering medications is to improve therapeutic outcomes and quality of life for patients. Failure to accurately calculate and administer the right dose of a patient's medication may lead to serious and life-threatening consequences, not to mention potential disciplinary and legal ramifications for the nurse.

Therefore, please take this basic math competency exam seriously. If you are weak in math, purchase the review book, do the self-assessment, and practice the questions. This review book will help you prepare for the exam. Please note that a calculator may be used for the basic mathematics competency exam. Check your work with the answers at the end of this exam.

**Basic Math Competency Practice Exam**

1. What is 0.06 + 8.49 + 11.3?
   a) 19.36 b) 19.85 c) 20.39 d) 20.57 e) None of these

2. Add $\frac{7}{2}$ and $\frac{1}{10}$ and reduce to lowest terms.
   a) $\frac{8}{12}$ b) $\frac{2}{3}$ c) $\frac{72}{20}$ d) $\frac{18}{5}$ e) None of these

3. What is 4 percent of 65?
   a) 0.62 b) 2.6 c) 16.25 d) 26 e) None of these
4. Which is greatest?
   a) 0.2   b) \( \frac{1}{10} \)   c) \( \frac{1}{75} \)   d) 0.18   e) \( \frac{15}{100} \)

5. Round 66.9758 to the nearest hundredth.
   a) 67   b) 66.97   c) 66.976   d) 66.9   e) None of these

6. Change \( \frac{5}{7} \) to a decimal and round to the nearest tenth.
   a) 0.7   b) 1.0   c) 1.4   d) 7.14   e) None of these

7. Add \( 2 \frac{5}{8} \) and \( 1 \frac{1}{4} \) and reduce to lowest terms.
   a) \( \frac{35}{32} \)   b) \( \frac{31}{2} \)   c) \( \frac{37}{8} \)   d) 4   e) None of these

8. Solve for \( x \) in the proportion: \( 2x + 2 = 8 \)
   a) \( \frac{1}{4} \)   b) 2   c) 3   d) 5   e) None of these

9. Solve for \( x \) in the proportion: \( 0.24 : x = 3 : 1 \)
   a) 0.72   b) 0.8   c) 24   d) 72   e) None of these

10. If an athlete runs 2 miles in 20 minutes, how many hours will it take the athlete to run 18 miles?
    a) 3   b) 9   c) 12   d) 180   e) None of these

11. If a plant requires \( \frac{1}{3} \) teaspoon of plant food once a week, how many teaspoons of plant food would be
    needed for a 15-week semester?
    a) \( \frac{32}{3} \)   b) 5   c) 15   d) 45   e) None of these

12. How many grams are in 42 milligrams?
    a) 0.0042   b) 0.042   c) 4.2   d) 4200   e) 42,000

13. 40°C is how many degrees Fahrenheit?
    a) 54.2   b) 72   c) 99.6   d) 102   e) 104
14. How many ounces are in $2 \frac{1}{4}$ cups?
   a) 12       b) 16.4       c) 18       d) 22       e) None of these

15. How many kilograms are in 132 pounds?
   a) 60       b) 66       c) 264       d) 290       e) None of these

16. Of 900 students surveyed, 360 students prefer to take the UML bus to an 8 A.M. class on South Campus while the others prefer to catch a ride with a classmate. What percentage of students prefers to catch a ride with a classmate?
   a) 25%       b) 35%       c) 40%       d) 60%       e) None of these

17. The number of milliliters in 0.8 liter is:
   a) 0.008       b) 0.8       c) 800       d) 8000       e) None of these

18. How many centimeters are in 10 inches?
   a) 3.9       b) 18       c) 25.4       d) 54       e) 100

19. A family's flight to Tampa, Florida departs at 11:50 am. The family must be at the airport two hours before departure time and the trip to the airport takes 55 minutes. At what time should the family leave for the airport?
   a) 9:05 am       b) 9:35 am       c) 10:05 am       d) 11:15 am       e) None of these

20. The recommended dose of a certain medication is proportional to body weight. If a patient weighing 125 pounds should take 25mg, what is the dose for a patient of 200 pounds?
   a) 35       b) 40       c) 45       d) 50       e) None of these

21. The number of milliliters in one tablespoon is:
   a) 4mL       b) 5mL       c) 10mL       d) 20mL       e) None of these

22. If a student weighs 119 and 7 ounces at the beginning of the September and gains 4 pounds and 13 ounces at the end of the second semester. How much does the student weigh at the end of the second semester?
   a) 123 lb and 2 oz       b) 124 lb and 4 oz       c) 124 lb and 8 oz       d) 125 lb
23. If the recommended dosage of a medication were 15mg per kg, what would the dose be for a child who weighs 40kg?
   a) 0.6g  b) 6g  c) 60mg  d) 600mcg  e) None of these

24. Change 0.8 to a fraction and reduce to the lowest terms.
   a) \( \frac{1}{80} \)  b) \( \frac{4}{5} \)  c) \( \frac{8}{10} \)  d) \( \frac{80}{100} \)  e) None of these

25. Calculate \( 2 \frac{7}{8} - 1 \frac{1}{2} \) and reduce to lowest terms.
   a) \( \frac{3}{4} \)  b) 1  c) \( 1 \frac{3}{8} \)  d) 2  e) None of these

26. What percent is 60mL of a bottle of infant formula with a total of 240mL?
   a) 0.25%  b) 4%  c) 18%  d) 25%  e) None of these

27. The physical therapist tells a patient to walk 45 minutes in one hour to improve her ambulation. What fractional part of an hour is the patient to walk?
   a) 0.45  b) 0.8  c) \( \frac{9}{25} \)  d) \( \frac{45}{100} \)  e) None of these

28. The physician prescribes a medication dosage of 0.45 grams. How many 150mg tablets need to be administered?
   a) \( 2 \frac{1}{2} \)  b) 3  c) \( 3 \frac{1}{2} \)  d) 4  e) None of these

29. If eight ounces of milk contains 280 milligrams of calcium, how much calcium is in twelve ounces?
   a) 336  b) 360  c) 400  d) 426  e) None of these

30. A patient started his morning with a one-liter pitcher of water. When the nurse checked in on the patient after breakfast, the pitcher contained 0.55 liters of water. How much water had the patient ingested?
   a) 0.55L  b) \( \frac{1}{20} \)L  c) 450mL  d) 12 oz  e) None of these

3/05 JSD

Answers:
1. b, 2. d, 3. b, 4. a, 5. e (66.98), 6. a, 7. c, 8. c, 9. e (0.08), 10. a, 11. b, 12. b, 13. e, 14. c, 15. a, 16. d, 17. c, 18. c, 19. e (8:55), 20. b, 21. e (15), 22. b, 23. a, 24. b, 25. c, 26. d, 27. e \( \frac{3}{4} \), 28. b, 29. e (420), 30. c