

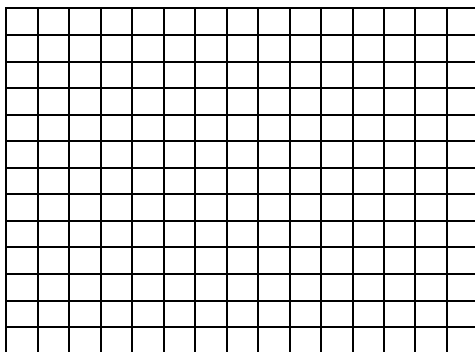
MATHEMATICS ASSESSMENT FOR CHEMISTRY AND PHYSICS INFORMATION SHEET



- ❑ As a student in CHEM 111 or PHYS 141, you will be required to take a mathematics assessment exam to evaluate your math skills.
- ❑ The assessment exam consists of the following seven sections:
 - Fractions, Decimals and Percents
 - Scientific Notation, Order of Operations, and Significant Digits
 - Formulas and Ratios and Proportions
 - Solving Equations (linear and quadratic)
 - SI Units and Conversions
 - Logarithms
 - Graphing and Trigonometry
- ❑ The first 6 sections contain 6 multiple choice questions. The questions for the last section on graphing and trigonometry are not multiple-choice.
- ❑ You will need a scientific calculator for the assessment exam.
- ❑ You will receive the results of the assessment as soon as possible. At that time, you will be advised if you need to seek tutoring help at the Math Center or if you need to take a mathematics course before taking CHEM 111 or PHYS 141.
- ❑ If you have any questions regarding this assessment exam, please contact Eileen Phillips, Director of the Math Center, at ephillip@keene.edu or at 358-2387.
- ❑ The following pages include sample questions and answers to problems similar to those you will find on the assessment exam. It is in your best interest to do these problems and seek help if you are having trouble agreeing with the correct answer. Tutors are available at The Math Center, 88 Winchester St., room 101. Call Barbara Yardley at 358-2023 for specific tutoring times.

**SAMPLE QUESTIONS FOR THE
MATHEMATICS ASSESSMENT FOR CHEMISTRY AND PHYSICS**

- 1) Express the answer in lowest terms: $4\frac{2}{5} - 3\frac{1}{2}$
- 2) Convert $\frac{7}{13}$ to a decimal rounded to the nearest hundredth.
- 3) What is 120% of 1435?
- 4) Use the order of operations to simplify: $5.6 - 2(7.3 + 8.2)$
- 5) Divide and express the answer in scientific notation: $\frac{5.36 \times 10^{-15}}{2.07 \times 10^{-4}}$
- 6) Write the product with the correct number of significant digits: $(5.03)(0.08)$
- 7) In a solution of water and alcohol, the ratio of water to alcohol is 4 to 1. If there are 35 liters of the solution, how many liters of water are there?
- 8) Given $D = RT$, find T when $R = 55$ mph and $D = 385$ miles. Be sure to include proper units.
- 9) Given $F = \frac{9}{5}C + 32$, find C when $F = 68^\circ$.
- 10) Solve each of the following equations for the indicated variable.
 - a) for x: $7 - 4x = -28$
 - b) for x: $z = \frac{x - y}{3}$
 - c) for D: $A = kD + A_r$
 - d) for x: $4x^2 - 7 = 9$
- 11) Use the grid below to graph $y = -\frac{1}{2}x + 3$.



ANSWERS

1) $\frac{9}{10}$ 2) 0.54 3) 1722 4) -25.4 5) 2.60×10^{-11}

6) 0.4 7) 28L 8) 7 hours 9) $C = 20^\circ$

10) a) $x = \frac{35}{4} = 8\frac{3}{4} = 8.75$ b) $x = 3z + y$ c) $D = \frac{A - A_t}{k}$ d) $x = \pm 2$

11) 3 points on the graph would be, (-2, 4), (0, 3), (2, 2)

12) a) $x = 61.6$ b) $x = 1.35$ 13) $1\text{mg} = 10^{-6}\text{kg} = 10^{-3}\text{g} = 10^3\mu\text{g} = 10^9\text{pg}$

14) 12 oz \approx 360 mL 15) 36.7 ft/sec 16) $200 \frac{\text{mg}}{\text{mL}}$ 17) 10.2 seconds

18) 67.4° 19) 9 miles