

Graduation Mathematics Competency Examination (GMCT)

INFORMATION & STUDY GUIDE

The Graduation Mathematics Competency Exam (GMCT) is offered to students who are ready to graduate and have not fulfilled the Santa Rosa Junior College (SRJC) math requirement for an Associate Degree. The Graduation Mathematics Competency Examination is a 40 question multiple-choice exam. It is a timed exam and is to be completed within a period of 45 minutes. The test covers topics from basic arithmetic, basic geometry and basic algebra. A score of 24 out of 40 is required to pass this exam. Calculators are not allowed. Test takers must present valid photo identification on the day of the exam. Please be advised that this exam is not transferable, and it is not part of the math course sequence. Please check the Placement Testing Schedule for dates, times and location of the GMCT exam.

Students who do not achieve a passing score will be allowed to retest in the following Fall, Spring, or Summer term.

In preparing for the exam, it is recommended that you review the following topics. Information and exercises may be found in most elementary or intermediate algebra textbooks.

- Percent
- Ratio and Proportion
- Signed Numbers
- Order of Operations
- The Pythagorean Theorem
- Perimeter and Area Formulas
- Volume and Surface Area Formulas
- Solving Linear Equations
- Exponents
- Polynomials
- Interpreting Information Presented Graphically

To help you decide if you are ready to take this exam, consider the following suggestions.

- 1) Strong arithmetic skills are necessary to successfully complete the test. The College Skills Math Labs have a computerized diagnostic test to help pinpoint areas of weakness.
- 2) If you believe that your arithmetic skills are strong enough, then work through the Graduation Mathematics Competency Examination Practice Problems, which are included with this handout. The answers are given on the last page.
- 3) Students who are currently enrolled in an SRJC class may take advantage of the drop-in tutoring and instruction available at the College Skills Math Labs in Room 615 at Analy Village at the Santa Rosa Campus or in Room 639, Richard Call Hall at the Petaluma Campus.

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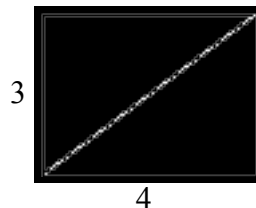
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- 4) Students wishing to brush-up on their math skills prior to taking the Graduation Mathematics Competency Exam may receive help in the College Skills/Tutorial Math labs. Come to the Analy Village, Room 615 at the Santa Rosa Campus or to the Richard Call Hall, Room 639 at the Petaluma Campus; and get enrolled in an open-entry, open-exit, non-graded lab.

GMCT PRACTICE PROBLEMS

The format of this practice sheet is different from that of the actual Graduation Mathematics Competency Examination (GMCT.) These problems are designed to target selected topics that should be reviewed before attempting the GMCT. The answers to each of the problems can be found on the last page.

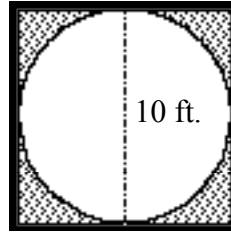
1. a) Find 25% of 88.
b) George bought a coat for \$190. He paid 20% down and the remaining amount, plus interest, at the end of a year. What was his last payment if the simple interest rate is 12%?
2. a) Two slices of bacon contain 85 calories. How many calories are there in 12 slices of bacon?
b) A recipe for oatmeal cookies calls for $1\frac{2}{3}$ cups of flour to make four dozen cookies. How many cups of flour would be needed for 6 dozen cookies?
3. a) $4^2 + 3 \cdot 2 = ?$
b) $16 - 18 \div 3 \cdot 2 = ?$
4. a) $7(3 + (-5)) = ?$
b) On four consecutive plays, a football player lost 10 yards, gained 8 yards, lost 15 yards and gained 21 yards. What was his average gain per carry?
5. a) Find the length of the diagonal (d) of a rectangle with width 3 and length 4.



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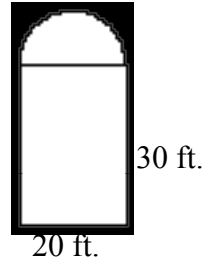
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- b) Find the area of the shaded region shown in the figure below. Leave the answer in terms of π .



6. A window is formed by placing a semicircle on top of a rectangle as shown.

- a) Find the perimeter of the window.
b) Find the area of the window.



(Use $\pi = 3.14$)

7. a) Find the volume of a shoe box which measures 5 inches by 8 inches by 14 inches.
b) Find the area of the label on a soup can with diameter $2\frac{1}{2}$ inches and height 4 inches.
(Use $\pi = 3.14$)

8. a) Solve: $13x + 5 = 8x + 40$
b) Solve: $9x - 2(5 + 5x) = 8$

9. a) Solve: $\frac{x}{6} = \frac{5}{3}$

b) If $D = \frac{n^2 - 3n}{2}$, then find D when $n = 7$.

10. a) $(3x^2)(4x^3) = ?$

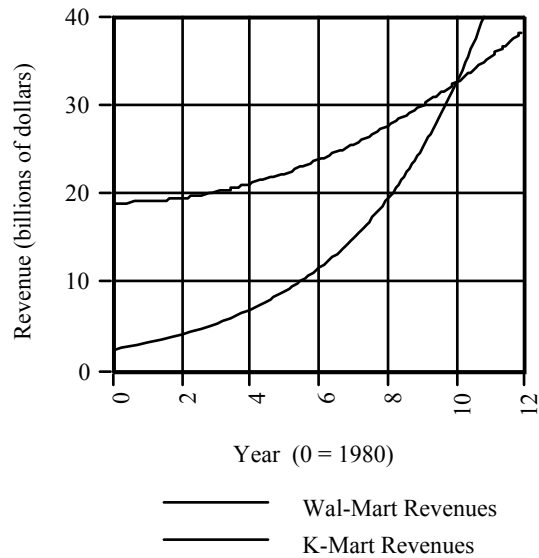
b) $(2x + 7)(3x - 5) = ?$

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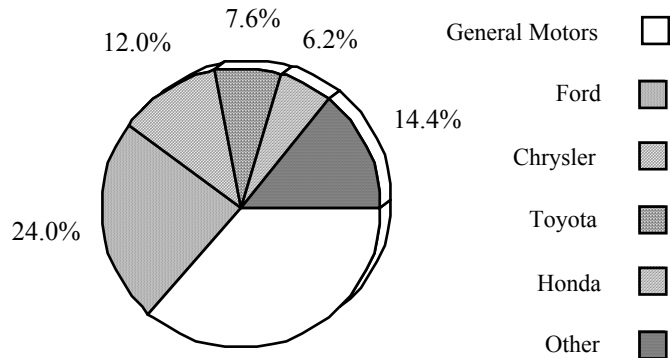
11. The graph at the right shows the revenue, in billions of dollars, earned by Wal-Mart and K-Mart stores during the years from 1980 to 1992.

- a) According to the graph, during which year were the revenues of both stores the same?
- b) What was the approximate total revenue of both stores during 1986?



12. The accompanying pie chart shows the market share for American vehicle sales (cars and trucks) for 1990.

- a) What percent of the market did General Motors have?
- b) If 15 million vehicles were sold during 1990, then find the number of vehicles sold by Toyota.



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ANSWERS TO GMCT PRACTICE PROBLEMS

- | | | |
|------------------------|--------------------------|----------------------|
| 1. a) 22 | 5. a) 5 | 9. a) $x = 10$ |
| b) \$170.24 | b) $100 - 25\pi$ sq. ft. | b) $D = 14$ |
| 2. a) 510 calories | 6. a) 111.4 ft. | 10. a) $12x^5$ |
| b) $2\frac{1}{2}$ cups | b) 757 sq. ft. | b) $6x^2 + 11x - 35$ |
| 3. a) 22 | 7. a) 560 cu. in. | 11. a) 1990 |
| b) 4 | b) 31.4 sq. in. | b) \$36 billion |
| 4. a) -14 | 8. a) $x = 7$ | 12. a) 35.8% |
| b) 1 yd. | b) $x = -18$ | b) 1.14 million |