



Grad School Test Prep

from the University of Minnesota

GMAT Mathematics Skills Assessment: Self-Scoring Math Test

Students studying for the GMAT begin the preparations at widely different levels of mathematical preparedness. While the quantitative review of **Preparing for the GMAT** provides a brief mathematics skills review, students gaining the greatest benefit from this strategies-based course are those who begin with an understanding of the basic arithmetic, algebra, and geometry concepts tested on the GMAT.

To help you gain the greatest benefit from **Preparing for the GMAT**, we are providing you with this mathematics skills assessment. This self-administered pre-test is designed to assess your current mathematics ability with respect to the math concepts commonly encountered in the GMAT quantitative sections. Please take the time necessary to work through each of the 33 problems on this pre-test. Do not be concerned with a time limit for this pre-test; rather, focus on understanding the math concept tested in each question.

Because you will not be able to use a calculator on the GMAT, you may not want to use a calculator on this test in order to get the most accurate picture of your math skills.

When you have finished all of the questions, use the answers given at the end of the test to determine the number of questions you have answered correctly.

Students correctly answering:

- 20 or more questions should be adequately prepared to take **Preparing for the GMAT** immediately;
- Fewer than 20 questions should consider registering for and completing **Math Refresher for the GRE and GMAT** before completing **Preparing for the GMAT**. For more information, call 612-624-4000.
- If you have significant difficulty with several areas of the test, consider taking courses in arithmetic and/or algebra.

Please turn the page and begin.

Taking this test should help place you in the class that addresses your needs:

MATH REFRESHER FOR THE GRE AND GMAT

This course is designed to strengthen your skills and build confidence through a review of math fundamentals presented in tandem with intensive math practice. You will learn simple test-taking strategies that will strengthen your ability to solve problems similar to those found on the actual GRE or GMAT exam. You'll prep efficiently with structured lessons organized to help you concentrate on the highest-yield areas. An expert teacher guides you through the program and provides extra help and personal attention when you need it. A personalized study plan ensures that you are maximizing your time and effort on the areas in which you need the most work. Visit www.cce.umn.edu/testprep for complete information.

PREPARING FOR THE GRE

This course is designed to prepare you efficiently for the GRE in a university classroom environment. Experienced math, verbal, and writing instructors direct you through a series of strategy lessons and practice exercises, answering your questions all along the way. You will learn how to optimize your test scores by studying effectively in the areas most likely to appear on the exam. You also will receive customized, personal feedback on your writing. Learn question types, advanced test-taking strategies, common test items, timing, and the most efficient ways to solve problems. Visit www.cce.umn.edu/testprep for complete information.

PREPARING FOR THE GMAT

This course can help raise your GMAT score. Experienced math, verbal, and writing instructors lead you through a series of strategy lessons and practice exercises, answering your questions all along the way. Discuss proven methods for dealing with each of the question types and work with test-simulation exercises. Learn test-taking strategies geared toward the three separately timed sections: verbal (reading comprehension, critical reasoning, sentence correction); analytical writing (analysis of an issue, analysis of an argument); and quantitative (problem solving and data sufficiency). You will learn how to optimize your test scores by studying effectively in the areas most likely to appear on the exam. Visit www.cce.umn.edu/testprep for complete information.

Answer the following questions as best as possible. There are 5 choices for each problem. Do not totally guess. However, if there is something about the problem that leads you to think a particular choice is the answer, then choose it. Answers are located on the back outside cover.

1. Which of the following fractions is greater than $\frac{1}{3}$?

- | | |
|---------------------|---------------------|
| a) $\frac{27}{82}$ | b) $\frac{20}{61}$ |
| c) $\frac{33}{100}$ | d) $\frac{16}{45}$ |
| | e) $\frac{51}{154}$ |

2. $3\frac{1}{4} + 4\frac{1}{3} =$

- | | |
|--------------------|--------------------|
| a) $7\frac{7}{12}$ | b) $7\frac{1}{6}$ |
| c) $5\frac{1}{2}$ | d) $12\frac{2}{3}$ |
| | e) $7\frac{1}{12}$ |

3. Simplify the following fraction: $\frac{\frac{5}{8}}{\frac{1}{2}}$

- | | |
|-------------------|-------------------|
| a) $\frac{5}{16}$ | b) $\frac{2}{5}$ |
| c) $\frac{1}{2}$ | d) $\frac{3}{4}$ |
| | e) $1\frac{1}{4}$ |

4. 38 is 20% of what number?

- | | |
|--------|--------|
| a) 760 | b) 190 |
| c) 380 | d) 7.6 |
| | e) 58 |

5. 30% of 70 is what percent of 2000?

- | | |
|-------------------|--------------------|
| a) $8\frac{1}{3}$ | b) 1.05 |
| c) 10 | d) 16 |
| | e) $12\frac{1}{2}$ |

6. A factory produces 100 units in year 1 and 150 units in year 2. What is the percentage change in units produced from year 1 to year 2?

- | | |
|-------------------------------|-------------------------------|
| a) 50% increase | b) 50% decrease |
| c) $33\frac{1}{3}\%$ increase | d) $33\frac{1}{3}\%$ decrease |
| | e) 67% increase |

7. The original price of a motorcycle is \$3,000. What is the new price if the original price is reduced by 10%?

- | | |
|-----------|-----------|
| a) \$2800 | b) \$2700 |
| c) \$2100 | d) \$600 |
| | e) \$1200 |

8. $(11)^3(11)^5$ equals

- | | |
|----------------|----------------------|
| a) 88 | b) $(11)^8$ |
| c) $(11)^{15}$ | d) $(22)^8$ |
| | e) none of the above |

9. Find $\sqrt{100} + \sqrt{49}$

- | | |
|-----------------|----------------------------|
| a) $\sqrt{149}$ | b) 23 |
| c) $\sqrt{490}$ | d) $\sqrt{10} + \sqrt{14}$ |
| | e) 17 |

10. $2^{-3} =$

- | | |
|------------------|------------------|
| a) $\frac{1}{8}$ | b) $\frac{1}{6}$ |
| c) -8 | d) 8 |
| | e) -9 |

11. Simplify $(x^3)^8$

- | | |
|-------------|-------------|
| a) x^{11} | b) $8x^3$ |
| c) x^{38} | d) 24 |
| | e) x^{24} |

12. If $m \times n = p$ and $p \neq 0$ where m , n , and p are real numbers, which of the following must be true?

- | | |
|----------------------|---------------------|
| a) p is an integer | b) $m \times p = n$ |
| c) $m \neq 0$ | d) $n \times p = m$ |
| | e) $m / n = p$ |

13. If r , s , and t are consecutive odd integers with $r < s < t$, which of the following must be true?

- | | |
|---------------------|--------------------|
| a) $rs = t$ | b) $s + t = r + 2$ |
| c) $r + t = 2t - s$ | d) $r + t = 2s$ |
| | e) $r + s = t + 2$ |

14. M , N , O are consecutive integers. Which of the following is true?

- | | |
|--------------------------------|-------------------------------|
| a) $M + N + O$ is always even | b) $M + N + O$ is always odd |
| c) $M + 2N + O$ is always even | d) $M + 2N + O$ is always odd |
| | e) None of these is true |

15. If $x^5 + 5x^4 + 3x + 2 = x^5 + 5x^4 + 9x - 22$, then $x =$

- a) 12
- b) 8
- c) 4
- d) 5
- e) 3

16. If $y = 5$ then $\sqrt{16 - 8y + y^2} =$

- a) -2
- b) 1
- c) 0
- d) 3
- e) 4

17. If $x + y = 11$ and $2y = 6$, then $x =$

- a) 7
- b) 8
- c) 14
- d) 3
- e) 5

18. $(y + 3)^2 =$

- a) $y^2 + 9$
- b) $2y + 6$
- c) $y^2 + 6y + 9$
- d) $y + 6$
- e) $36y^2$

19. Factor $15a^3 - 15ab^2$ completely.

- a) $a(15a^2 - 15b^2)$
- b) $15a(a + b)(a - b)$
- c) $a(15a + b)(a - b)$
- d) $3ab(5a^2 - 5ab)$
- e) $5a(3a + 3b)(3a - 3b)$

20. If x is to 8 as 15 is to 12, then x equals

- a) 10
- b) 14
- c) 8
- d) 6
- e) 12

21. If there are 1.15 land miles in a nautical mile, how many land miles are there in 10 nautical miles?

- a) 15
- b) 12.3
- c) 8.8
- d) 11.5
- e) none of these

22. A trip takes 5 hours in a car moving 40 miles per hour. How long would the trip take in a train moving at 100 miles per hour?

- a) 1 hour
- b) 2 hours
- c) 3 hours
- d) 4.5 hours
- e) 12.5 hours

23. It takes Bill 4 hours to do a job. It takes Jane 2 hours to do the same job. How many such jobs could they do together in 4 hours?

- a) 1
- b) 3
- c) 5
- d) 7
- e) 9

24. Find the average of m , $m + 1$ and $m + 2$

- a) m
- b) $m + 3$
- c) $m + 1$
- d) $3m + 3$
- e) $m + 2$

25. If the average of 6, 9, and x is 10, find x .

- a) 30
- b) 10
- c) 21
- d) 15
- e) 18

26. Solve for x . Given that $1 < 3x - 5 < 10$.

- a) $2 < x < 5$
- b) $1/3 < x < 3 \frac{1}{3}$
- c) $x < 2$ or $x > 5$
- d) $3 < x < 5$
- e) $-2 > x > -5$

27. If two angles are supplementary, then their sum is

- a) 60 degrees
- b) 90 degrees
- c) 180 degrees
- d) 270 degrees
- e) 360 degrees

28. The diameter of a circle is 10. Find its area.

- a) 100
- b) 50
- c) 100π
- d) 10π
- e) 25π

29. If $2x + y = 4$ and $x - y = -1$, then $y =$

- a) 1
- b) -2
- c) 0
- d) 2
- e) -3

30. If the perimeter of a square is 56, the length of each side is

- a) 10
- b) 12
- c) 14
- d) 8
- e) cannot be determined

31. The angles in a triangle sum to

- a) 90
- b) 180
- c) 135
- d) 270
- e) 360

32. If the base and height of a right triangle are 6 and 8 respectively, what is the area of the triangle?

- a) 48
- b) 28
- c) 36
- d) 24
- e) 14

33. What is the measure of the third side of the triangle from #32?

- a) 9
- b) 10
- c) 11
- d) 12
- e) 13

END OF TEST

The answers are located on the next page.

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Visit our Web site at:
www.cce.umn.edu/testprep



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Answers to the GMAT Mathematics Skills Assessment

To score your answers, simply turn this page upside down.

If you score 20 or more correct answers, you should be adequately prepared to take **Preparing for the GMAT**.

If you score fewer than 20 correct answers, you should consider registering for **Math Refresher for the GRE and GMAT**.

Answers: 1) d 2) a 3) e 4) b 5) b 6) a 7) b 8) b 9) e 10) a 11) e 12) c 13) d 14) c 15) c 16) b 17) b 18) c
19) b 20) a 21) d 22) b 23) b 24) c 25) d 26) a 27) c 28) e 29) d 30) c 31) b 32) d 33) b