PRETEST

Mathematical Reasoning

50 questions | **90 minutes**

This pretest is intended to give you an idea of the topics you need to study to pass the GED® Mathematical Reasoning test. Try to work every problem, in a quiet area and with enough time so that you are free from distractions. The usual time allotted for the test is 90 minutes, but it is more important to be sure you get a chance to think about every problem than it is to finish ahead of time.

Answers and solutions for every problem can be found at the end of the pretest.

For questions 1–3, fill in the missing items.

	Decimal	Percent	Fraction
1.	0.03	_____	_____
2.	_____	45%	_____
3.	_____	_____	$\frac{7}{15}$

4. A store reduces the price of a toaster by 25%. The salesperson gives a customer an additional 10% off. What is the total discount the customer is getting, expressed as a percentage?

   A. 1%
   B. 2.5%
   C. 32.5%
   D. 35%

5. If $A > B$, what is the correct relationship for

   $-A$ _____ $-B$? *Write the correct symbol on the line.*

6. Write the equation of a line parallel to $y = 7x + 2$ and passing through the point (5, 10). *Write your answer in the space below.*

7. Convert the fraction $\frac{3}{8}$ to an equivalent fraction with a denominator of 32. *Write your answer in the box.*

   ☐

8. Solve by factoring: $3x^2 - 5x - 12 = 0$. *Write your answer in the space below.*

9. Which of the lines below is not parallel to $x - 2y = 12$?

   A. $y = -\frac{1}{2}x - 4$
   B. $2x - 4y = 16$
   C. $y = \frac{1}{2}x + 21$
   D. $x - 2y = 8$

For questions 10–12, write your answer in the space provided.

10. Solve for x: $3x + 12 > 2x + 1$.

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11. Multiply $(2x - 7)(3x + 1)$.

12. Add $\frac{1}{4} + \frac{2}{3}$.

13. What is the distance between −4 and 4 on the number line?

    A. 0
    B. −8
    C. 8
    D. 16

14. Arrange in order from least to greatest: $\frac{1}{8}, \frac{2}{3}, \frac{3}{5}, \frac{2}{7}, \frac{5}{6}$. *Write your answer in the space below.*

15. Given a 6-sided die (one of a pair of dice) that measures 1.75 centimeters on an edge, what is the volume of the die? *Write your answer in the box.*

    $\square$ cm^3

16. A bowl of colored balls contains 30% red balls, 20% blue balls, and 30% green balls; the rest are white balls. What is the probability of randomly selecting a color other than red on a single draw? *Write your answer in the box.*

    $\square$

For questions 17–18, write your answer in the space provided.

17. 25% : 75% :: _____ : 18

18. 3 : 10 :: _____ : 150

19. The ratio 5:7 is the same as

    A. 35
    B. $\frac{5}{7}$
    C. $\frac{7}{5}$
    D. 0.625

For questions 20–21, write your answer in the space provided.

20. Suzy has made a mistake and added 4 teaspoons of baking powder to 5 cups of flour in a recipe that calls for 3 teaspoons of baking soda to 5 cups of flour. In order to not waste the entire batch, she has decided to add flour to get the proper proportion of baking powder to flour. How much flour should she add?

21. Subtract $-7x + 2$ from $4x + 7$.

22. A group of 16 adults, 9 of whom are men, have placed their names on slips of paper in a large bowl. What is the probability of selecting three women's names in a row? *Write your answer in the box.*

    $\square$

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23. Which of the following is (are) NOT function(s)?

A.

x	1	2	5	–1	–5
y	2	3	9	7	2

B.

x	–2	–1	0	1	2
y	4	4	4	4	4

C.

x	–1	2	–1	4	–1
y	2	4	3	11	2

D.

x	–2	–1	0	–1	–2
y	15	7	0	7	15

For questions 24–40, write your answer in the space provided.

24. A business owner adds 45% to the price of an item to cover operating costs and profit margin. What is the selling price of an item that costs the owner $120?

25. What is the value of $2x^2 + 3y^3$ when $x = 3.5$ and $y = 2.25$?

26. For what integer values of x is $x > 4$ true?

27. Starting at –14 on the number line, in which direction must you go, left or right, to find –11?

28. If $y = \sqrt{x - 2}$, then for what values of x is y a real number?

29. What is the area of a triangle with a base of 15 and a height of 6?

30. What is the slope of a line perpendicular to $3x + 4y = 13$?

31. What is the perimeter of a rectangular field that measures 660 feet by 330 feet?

32. Reduce to lowest terms: $\frac{x^5}{x^3}$.

33. How many cubic centimeters can a tin can hold if it is 11.0 centimeters high and its top is 7.4 centimeters in diameter?

34. Multiply 3.45 by 0.765 by 34.505.

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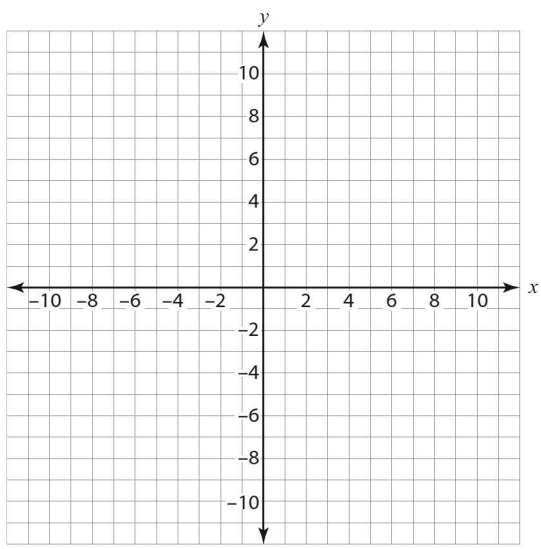
35. If $f(x) = 5x^2 - 7x + 4$, what is $f(-2)$?

36. $x^{-3} =$ _____

37. Add 45.05 + 1.007 + 3.0754 + 0.001.

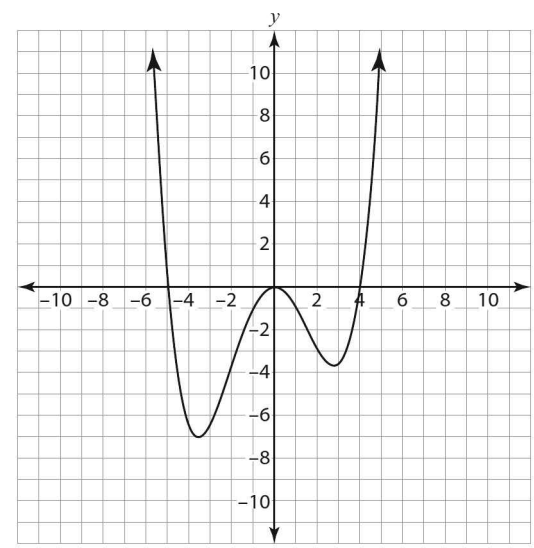
38. Graph $3x - 5y = -10$.



39. Simplify $\frac{6x^2 + 8x}{2x^2}$.

40. Simplify $\sqrt[4]{162}$.

41. Is this the graph of a function? Check ____ Yes or ____ No.



42. Can you divide $\frac{y^4}{x^2}$? Check ____ Yes or ____ No.

43. Multiply $(x + 2)^2$.

A. $x^2 + 4$

B. $4x^2$

C. $x^2 + 2x + 4$

D. $x^2 + 4x + 4$

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44. If housing prices have increased by 17% since last year, what was the old price of a house that today sells for $185,000? *Write your answer in the box.*

$ [ ]

For questions 45–50, write your answer in the space provided.

45. Subtract $\frac{2x+2}{4y} - \frac{3x-7}{2x}$.

46. Given the equation $y = 3x + 4$, what are the slope and y intercept?

47. A bag has 6 red marbles and 12 blue marbles. A marble is drawn from the bag at random. What is the probability that it is blue?

48. What are the mean, median, and mode of the data set {5, 3, 6, 4, 6, 2, 8, 2, 6, 3, 6, 9, 1, 4, 7}?

49. Solve $x^2 - 5x - 6 = 0$.

50. Solve $-2x + 17 > 11$.

THIS IS THE END OF THE MATHEMATICAL REASONING PRETEST.

ANSWERS AND SOLUTIONS BEGIN ON THE NEXT PAGE.