

Name:

Grade 9-10

123 Math Magic

2026

Grade 10(Based on grade 9)

Instructions:

1. Write your name on every page.
2. You have 75 minutes to complete this contest.
3. Marks are not taken off for wrong answers.
4. Calculator is allowed.

Date:

SCORE: ____/150

Name:

Grade 9-10

Part A: Each question answered correctly worth 5points.

1. Express $2x+3y-6 = 0$ in slope form. _____
2. Find the slope of the line that passes through (3,5) and (5,9)
a. 2 b. $\frac{1}{2}$ c. $\frac{3}{4}$ d. none of these
3. The equation of the line passing through (2,-6) with slope of -1 is
a. $y = 2x-1$ b. $y = -6x+1$ c. $y = 6x-1$ d. none of these
4. Determine the equation of a line which is parallel to $y = -3x+5$ and has the same y intercept as $y = 2x+3$ _____
5. The white family is running home from a vacation on a constant speed. After 3 hours they are 350 km from home. After 5 hours they are 130 km from home. Find their speed.
a. 90 km/h b. 110 km/h c. 120km/h d. none of these
6. Find two single digit natural numbers whose product is a one digit number and sum is two digits number. _____
7. $(x+4)(x+4) = ?$
a. x^2+16 b. $x^2+4x+16$ c. $x^2+8x+16$ d. $x^2+ 16x$
8. If $x = 10$ then the value of $(4x^2+20x+25) = ?$
a. 256 b. 425 c. 625 d. 575
9. Factorize : $(7a^2 - 63 b^2)$
a. $(7a-9b)(9a+7b)$ c. $(7a-9b)(7a+9b)$
b. $9(a-3b)(a+3b)$ d. $7(a-3b)(a+3b)$

Name:

Grade 9-10

10. What is the measure of each exterior angle of a regular hexagon? _____

11. If each side of a cube is doubled then its volume will be:

- a. Doubled b. becomes 4 times c. becomes 6 times
d. become 8 times

12. Find the value of A, B and C:

$$\begin{array}{r} 35A \\ - \quad CB8 \\ \hline 183 \end{array} \qquad A = _, B = _, C = _$$

13. A piece of ribbon 6.5 m long is cut into two pieces. One piece is twice as long as the other. What is the length of longer piece?

- a. 4.33 m b. 2.17m c. 4.54m d. 2.54 m

14. The lowest temperature ever recorded was -61.1°C at Fort Vermilion in 1911. The highest temperature was 43.3°C at Bassano Dams in 1931. What is the difference between these temperatures?

- a. 20 b. -17.8 c. 104.4 d. none of these

15. The product of two rational numbers is $-28/27$. If one of them is $-4/9$, find the other.

- a. $7/3$ b. $-7/3$ c. $7/49$ d. $-7/9$

Name: _____

Grade 9-10

16. Expand and simplify: $3(3n-4)+2(n+1)$ _____
17. Double of a number is increased by 24 is 28. What is the number? _____
18. Write in slope form: $2x - y + 3 = 0$ _____
19. In equation of a line when $Y = 3$, slope of a line is
- a. Zero b. undefined c. 3 4. Unknown
20. In equation $X = 3$, the slope of a line is
- a. Zero b. undefined c. 3 4. Unknown

PART B: EACH QUESTION IS WORTH 10 MARKS.

1. Determine the equation of a line perpendicular to the line $3x+2y-4=0$, passing through the points (2,3). Graph the equation



Name:

Grade 9-10

2. A fitness centre offers a membership card for an initial cost plus a monthly fee. Joyce paid \$140 for 3 months at the centre. Hitoshi paid \$230 for 6 months at the centre.

a) Let C be the cost of the membership card, and n the number of months. Determine the equation of the line that represents this situation. (8 marks)

b) Does this represent a direct or partial variation? Explain your reasoning. (2 marks)

3. Factor:

a. $2x^2 + 5x + 2$

b. $49x^2 - 25$

Name:

Grade 9-10

4. Given the equation of a circle is $X^2 + Y^2 = 5$, Determine if point $(-2, 7)$ and point $(4, -3)$ is inside , outside or on the circle. Show your work.
5. The sum of Chris and Martha's age is 36. If Chris is 4 years younger than Martha, how old are they?