

MARIAN CATHOLIC HIGH SCHOOL

Incoming 9th Grade Students

Summer Math Problems

Name: _____ **Date:** _____

A. Simplify each expression:

1. $\left(2\frac{1}{2}\right) + \left(-3\frac{1}{8}\right)$

2. $-7.4 - 2.8$

3. $\frac{8 + 4(3)^2}{2^2}$

4. $\frac{(5)(-3)(5)}{5^2}$

B. Evaluate each expression for a = -4, b = 6, and c = 2.5:

5. $2ab$

6. $b^2 - 2c$

7. $\frac{3a^2}{b-c}$

8. A taxicab company charges each person a flat fee of \$2.25 plus an additional \$0.60 per quarter mile. (a) Write a formula to find the total cost for each fare, and (b) Use the formula to find the cost for 1 person to travel 6 miles.

9. On four plays, a football team gained 15 yds, lost 6 yds, gained 12 yds, and lost 3 yds. What is the total number of yards gained or lost on the four plays ?

10. Tom worked 16 hours picking up garbage along the roadside. This is 65% of his requirement for community service. How many hours is he required to do ? Round to the nearest hour.

11. A football coach needs 12 players to ride on a float in a parade. He randomly selects names from a helmet. The helmet contains the names of 4 freshmen, 13 sophomores, 14 juniors and 8 seniors. What is the probability the first two names chosen are juniors ?

C. Solve the following proportions:

12. $\frac{x}{9} = \frac{8}{20}$

13. $\frac{y}{6} = \frac{5}{8}$

14. $\frac{3}{w} = \frac{6}{14}$

15. Your car averages 18 miles per gallon on the highway. If gas costs \$1.63 per gallon, how much does it cost to travel round trip to work if you work 12 miles away ?

16. What is the range of the function $f(x) = x^2 + 1$, when the domain is $\{-6, 4, 8\}$.

D. Determine the slope of the line passing through each pair of points:

17. A(5,2), B(7,12)

18. P(-1,4), Q(5,-5)

E. Write each equation in slope-intercept form:

19. $-8y = 5x + 3$

20. $6x = 4y - 12$

F. Solve the following systems of equations using any method:

21. $y = -x + 5$
 $y = 2x - 4$

22. $6x - 18y = 60$
 $9x + 2y = 32$

G. Simplify each product.

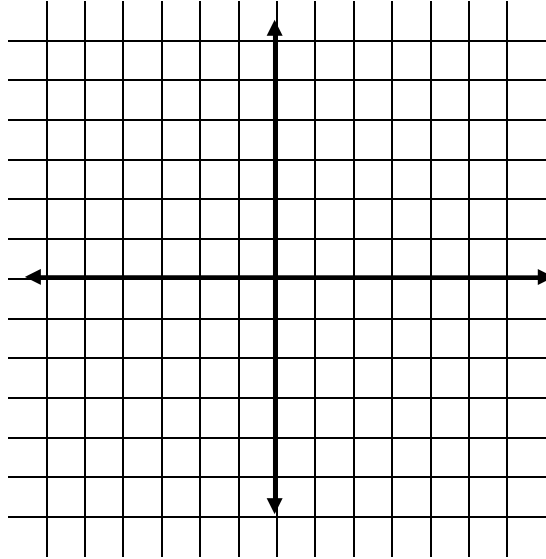
23. $(x - 5)(x + 6)$

24. $(y + 1)(y - 1)$

H. Graph the following equations in the same coordinate plane:

25. $y = 2x - 1$

26. $y = -\frac{1}{2}x + 2$



NOTE: For problems 25 and 26. What type of lines are formed _____.

Compare their slopes. _____

I. Graph the following equations in the same coordinate plane:

27. $y = -3$

28. $x = 1$

29. $y = -3x + 3$

30. $y = x$

