

Marian Catholic High School  
Algebra II Readiness  
Summer Math Problems

Name: \_\_\_\_\_

**Evaluate each expression.**

1.  $\frac{x}{18}$  for  $x = 24$

2.  $(y - 1)^2$  for  $y = 6$

**Simplify each expression**

3.  $3(2x + y)$

4.  $6x^2 + 2y + 2x + 2x^2$

5.  $-8x - (9 - 4x)$

6.  $(x + 3)(2x - 5)$

7.  $\frac{36a^4b^7}{-3ab^2}$

8.  $4x^2(2x^3 - x + 7)$

9.  $(3x^2y^2)^3$

**Write as an algebraic equation and solve**

10. 7 less than  $y$  is  $-3$ . Find  $y$ .

11. The number of girls in the band is one more than twice the number of boys. There are 19 students in the band. How many are boys?

12. What percent of 150 is 30?

13. Eight more than the square of a number is six times the number. Find the number.

**Solve**

14.  $\frac{8}{x} = \frac{16}{1}$

15.  $8w + 24 - 6w < 6$

**Factor**

16.  $x^2 - 9$

17.  $y^2 - 10y + 24$

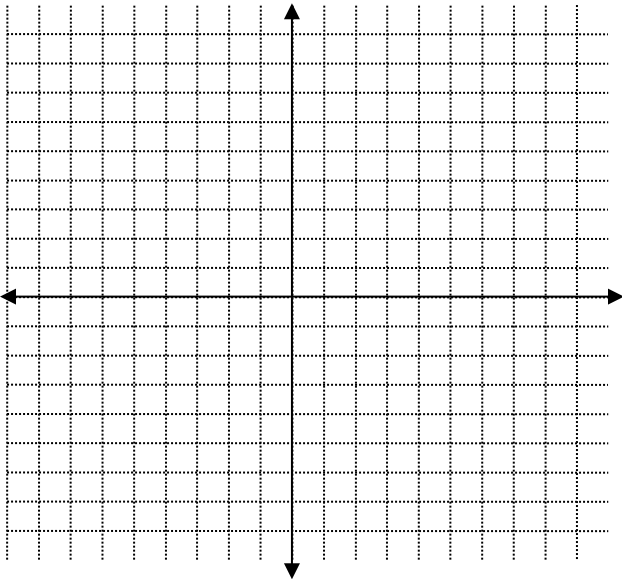
18.  $4ab^2 - 6a^2b$

19. In which quadrant is the point  $(-2, 7)$  located? \_\_\_\_\_

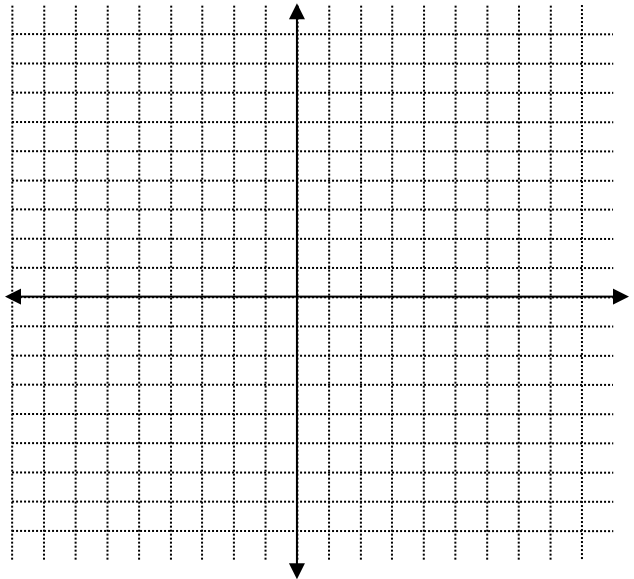
20. Find the slope of the line containing  $(2, 2)$  and  $(-1, 8)$

21. Write the equation in slope intercept form:  $2y + 4x = 8$

22. Graph the line  $y = -\frac{1}{2}x - 2$



23. Graph the line  $x = 7$



24. Are the two lines parallel? Answer *yes* or *no* and explain why or why not.  
 $2y = 4x + 6$                        $y - 2x = 7$

**Simplify the radical expressions**

25.  $\sqrt{48}$

26.  $\sqrt{175}$

27.  $\sqrt{\frac{4}{3}}$

28. Solve for  $y$  using the Pythagorean Theorem

