

Marian Catholic High School  
Geometry (same as Incoming Sophomore)  
Summer Math Problems

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

Evaluate each expression for  $a = 5$  and  $c = -2$

1.  $ac + c^2 + |6c|$

2.  $\frac{3a}{c+8}$

Solve for  $x$

3.  $\frac{5}{2}x + \frac{7}{2} = 1$

4.  $8(x+9) = 112$

5.  $17x + 6 > 20 - (2x + 52)$

6.  $2x^2 = 15 + x$

7.  $3x^2 = 27$

8.  $x^2 - 12x + 36 = 0$

**9. Solve the system of linear equations.**

$$4x - 2y = 10$$

$$-x + 2y = -7$$

**Multiply the polynomials**

**10.**  $2x^3y(8x - 2x^2y)$

**11.**  $(2x + 4)(3x - 1)$

**12.**  $(x + 2)(5x^2 - 10x + 4)$

**Factor the polynomials**

**13.**  $y^2 - 6y + 9$

**14.**  $x^2 - 64$

**15.**  $27b^3 + 1$

**16.**  $3x^3 - 5x^2 - 2x$

Simplify each expression

17.  $\sqrt{128}$

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

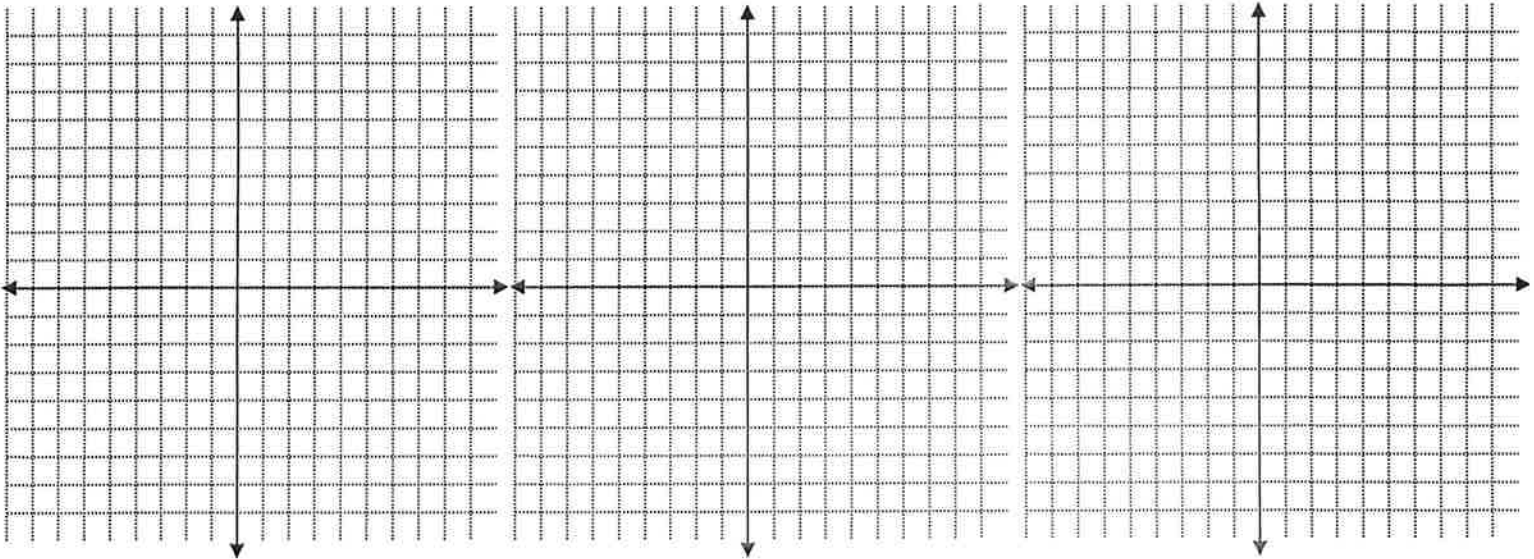
19.  $\frac{y^2 - 2y - 3}{y^2 + 3y + 2}$

Graph the following linear equation in the coordinate plane

20.  $y - 1 = 2x$

21.  $x = -3$

22.  $6y = 24$



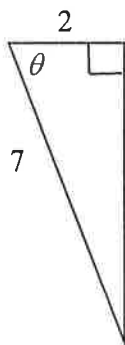
23. If  $f(x) = 4x^2 - x + 2$  find  $f(-1)$

24. Find the slope of the line containing  $(0,7)$  and  $(-2,9)$

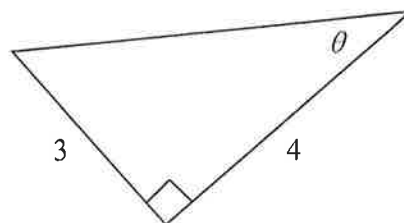
25. Find an equation of the line containing  $\left(\frac{1}{2}, -1\right)$  with slope 5

Find the measure of  $\theta$  in the right triangle shown

26.



27.



28. Find the missing side length using the Pythagorean Theorem

