

Marian Catholic High School
Incoming Sophomores
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. $\sqrt{\frac{4}{3}}$

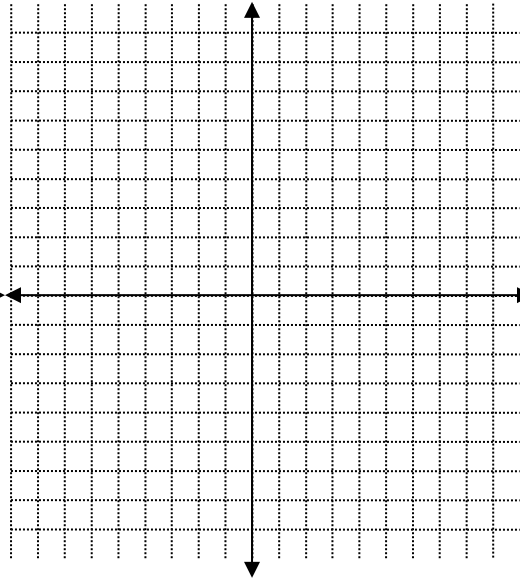
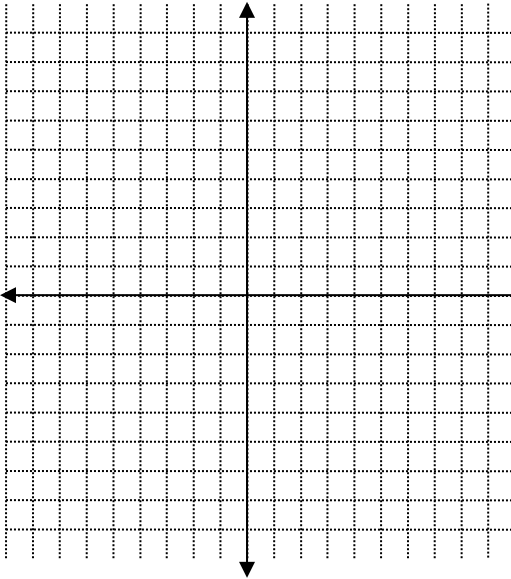
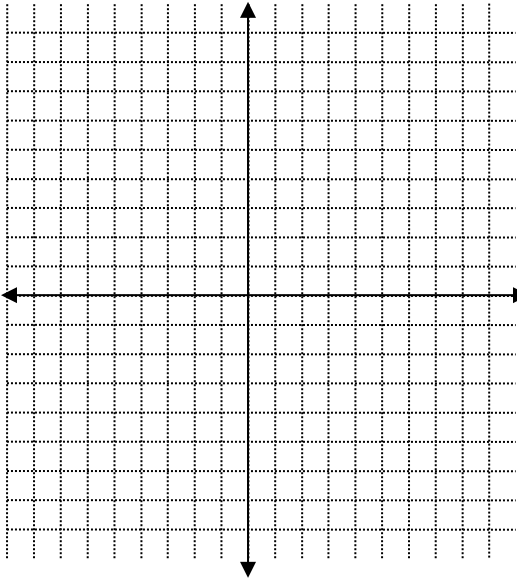
19. $\frac{y^2 - 2y - 3}{y^2 + 3y + 2}$

Graph the following linear equation in the coordinate plane

20. $y - 1 = 2x$

21. $x = -3$

22. $6y = 24$



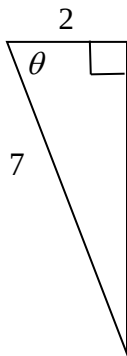
23. If $f(x) = 4x^2 - x + 2$ find $f(-1)$

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

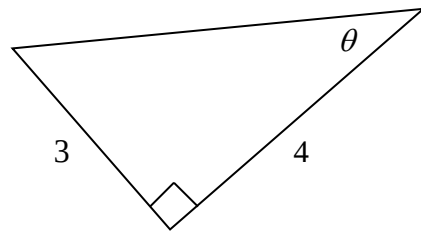
25. Find an equation of the line containing $\left(\frac{1}{2}, -1\right)$ with slope 5

Find the measure of θ in the right triangle shown

26.



27.



28. Find the missing side length using the Pythagorean Theorem

