

## Mathematics Worksheet for Incoming Students Trinity Pawling Level 1

Name: \_\_\_\_\_ Entering Grade: \_\_\_\_\_

*Please complete this worksheet in less than one (1) hour. This assessment is meant to help us place you in the appropriate Mathematics course. As such, these questions will be of different levels of difficulty.*

A calculator should not be necessary to complete these problems.

Please show all of your work for each problem.

1. Evaluate  $\frac{m+n}{5}$  for  $m = 3$  and  $n = 7$

2. Evaluate  $(y - 4)^2$  for  $y = 5$

3. Multiply  $9(x - 3y + 2z)$

4. Write a true statement using  $>$  or  $<$

a.  $-3$  \_\_\_  $-5$

b.  $2.707$  \_\_\_  $2.770$

c.  $|3|$  \_\_\_  $|-4|$

5. Perform the given operations:

a.  $7-18$

b.  $-12 - (-2)$

c.  $4(-6)$

d.  $-28 \div 7$

e.  $\frac{1}{2} + \frac{2}{3}$

f.  $\frac{3}{4} - \frac{7}{8}$

g.  $\frac{2}{3} * \frac{6}{5}$

h.  $\frac{4}{3} \div \frac{2}{1}$

6. Simplify:  $3x + 2y - 4x + 4y + 3$

7. Simplify:  $(2x - y) - (4x - y)$

8. Solve:  $-7x + 24 = 60$

9. Solve:  $5(x + 3) + 4 = 3(x - 2) + 1$

10. Solve:  $2(90 - x) + 20 = 180 - x$

11. Using  $x$  as your variable, write an algebraic expression for:

a. ten more than a number

b. twice a number

c. one less than a number

12. Multiply:  $(x + 3)(x - 4)$

13. Expand:  $(2x - 1)^2$

14. Evaluate:  $x^3 - 2x^2 + 1$  for  $x = -2$

15. Simplify:  $\frac{8x^2y^3}{4x}$

16. Add:  $5x^3 + 6x^2 - 3x + 1$  and  $3x^3 - 4x^2 - 2x + 3$

17. Factor:

a.  $4x - 8$

b.  $x^2 - 4$

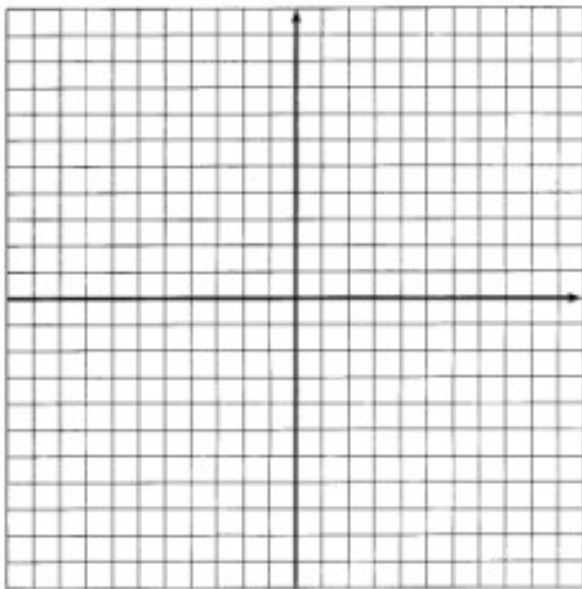
c.  $x^2 + 3x + 2$

18. On the following graph, graph and label:

a.  $(3, -2)$

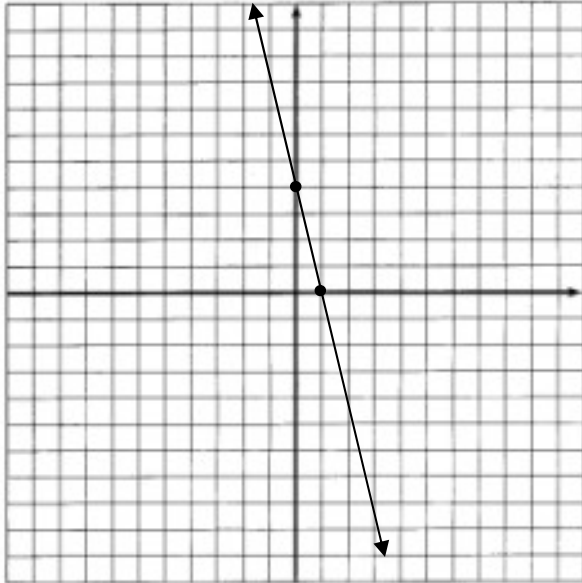
b.  $y = 2x + 1$

c.  $x = 4$



19. Using the line on the following graph, find:

- a. the x-intercept
- b. the y-intercept
- c. the slope of the line



20. Solve this system for x and y:

$$\begin{cases} 2x + y = 5 \\ 3x - y = 5 \end{cases}$$