

Name \_\_\_\_\_

Algebra with Enrichment  
Final Examination  
Part I

1. Simplify  $16 \div 2 - 4^2 - 3^2$

2. Solve for g:  $\frac{g}{5} - 2 = 3$

3. Multiply  $4(q - 3)$

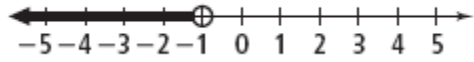
4. Solve for t:  $8(t + 7) = 32$

5. A long-distance phone company charges \$4.95 per month plus an additional \$.10 per minute.

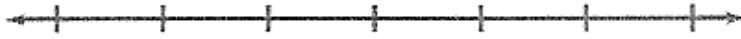
a. Define a variable and write a formula to find the total cost per month for long-distance service.

b. Use this formula to find the long-distance charges for 120 minutes of calls in one month.

6. Write an inequality for the graph below:



7. Solve and graph  $6x + 4 \geq 16$



8. Solve for x.  $\frac{x}{11} = \frac{6}{4}$

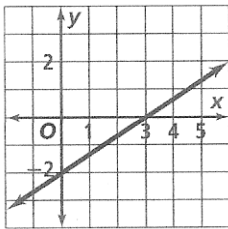
9. What is 35% of 360?

10. Write a function rule (equation) for the data below:

x	f(x)
-2	-3
-1	-1
0	1
1	3
2	5

11. Find the slope of the line passing through the points (9, -4) and (8, 5).

12. Give the equation of the line shown in the graph below:



13. Write the equation in slope-intercept form of the line that passes through (-4, 5) and is parallel to the line given by the equation  $y = -\frac{1}{2}x + 4$

Name \_\_\_\_\_

Algebra with Enrichment  
Final Examination  
Part II

For problems 14-15, solve the system of linear equations.

14.  $2x - y = 9$   
 $5x + 2y = 27$

15.  $y = -3x - 3$   
 $y = x + 5$

16. Use the sequence -2, 6, -18, 54, ...

a. What is the common ratio?

b. What are the next three terms?

c. Write a rule for the sequence.

d. What is the tenth term of the sequence?

A(n) =

17. Simplify  $\frac{a^{-5}k^7}{a^3k^2}$

18. Multiply  $(b + 5)(b - 8)$

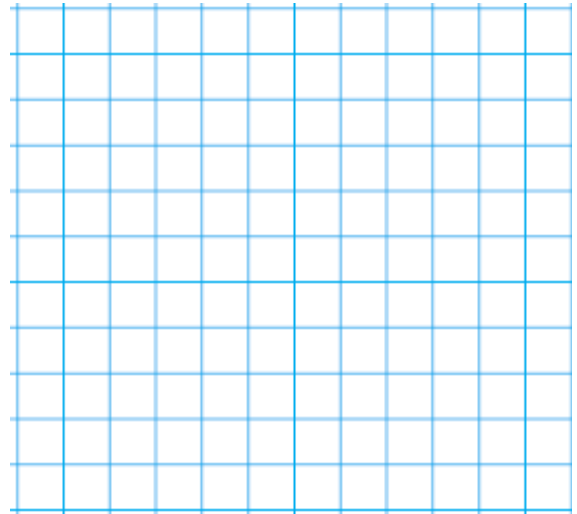
19. Does  $(x^2 + 4y)^2$  equal  $x^4 + 16y^2$ ? Justify your answer.

20. Factor  $w^2 + w - 56$

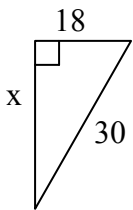
22. Solve for z:  $z^2 - 8z + 15 = 0$

23. Make a sketch of  $y = x^2 + 1$

(Hint: Find the line of symmetry and vertex first, then determine whether it opens up or down and whether it's fat, skinny, or normal)



24. Solve for x.



25. Simplify  $\sqrt{120}$