

# Algebra 1 Review (Do work on own paper)

Name \_\_\_\_\_

1. Simplify:  $9 - 4(8 - 3) + 10 \div 2$
2. Solve for g:  $5(g - 6) + 3 = 8$
3. Solve for n:  $5(n - 3) + 23 = 2(n - 5)$
4. Solve for n:  $3(n + 2) - 16 = 8n$
5. Solve using an equation:  
There are 8 more boys than girls in the class. If there is a total of 32 students in the class, how many are boys?
6. Solve using an equation:  
Jim is three times as old as Jill. If the sum of their ages is 20, how old is each?
7. Simplify:  $\frac{32x^5y^7z}{20x^8y^2}$
8. Perform the indicated operation and simplify:  
 $(3x^2 - 5x - 7) - (8 - 9x^2 + 2x)$
9. Perform the indicated operation and simplify:  
 $(2x - 8)(7x - 3)$
10. Factor completely:  $49x^2 - 25$
11. Factor completely:  $7x^2 - 36x + 5$
12. Factor completely:  $x^3 - x^2 - 20x$
13. Simplify:  $\frac{x^2 - 12x + 11}{x + 3} \cdot \frac{x^2 + 4x + 3}{x^2 - 1}$
14. Simplify:  $\frac{x^2 - 3x - 18}{x^2 - x - 2} \cdot \frac{3x + 3}{x^2 - 2x - 15}$
15. Solve for x:  $x^2 - 3x - 10 = 0$
16. Solve for r:  $6r^2 + r = 12$

17. Simplify:  $\frac{5}{2a^2} + \frac{7}{4a}$

18. Simplify:  $\frac{2x+1}{10} - \frac{x}{15}$

19. Solve for x:  $\frac{x+2}{15} - \frac{x-3}{5} = \frac{1}{3}$

20. Solve for a:  $\frac{7}{2a} + \frac{3}{4} = \frac{1}{2a}$

21. Solve the proportion for x:  $\frac{8}{x-3} = \frac{5}{x}$

22. Solve the proportion for x:  $\frac{x-4}{x+5} = \frac{x-3}{x+9}$

23. Graph the line on the coordinate plane:  $5x - 2y = 6$

24. Find the slope of the line containing the points  $(-2,4)$  and  $(-7,1)$

25. Solve the system using any method.  $x + 3y = 15$   
 $2x - y = 2$

26. Solve:  $x + y = 2$   
 $x - 2y = -10$

27. Solve and graph on a number line:  $4 - 5x < 22 - 2x$

28. Simplify:  $12\sqrt{75}$

29. Simplify:  $\frac{5}{\sqrt{3}}$

30. Simplify:  $3\sqrt{45} - \sqrt{20}$