

Name \_\_\_\_\_

Algebra 2 and Trigonometry Regents Review

Quiz

To Receive Credit Oshaw work

Due 1/4/10

You must show work.

on loose leaf.  
Put answers here

1. If  $f(b) = b^0 + b^{-1} + b^{-2}$ , find  $f(2)$ .

2. Solve for  $x$ :  $\sqrt{2x-4} - 6 = 0$

3. For what values of  $x$  is the fraction  $\frac{4-x}{x^2-4}$  undefined?

4. What is the solution set of the equation  $|2x+5| - 4 = 3^2$ ?

5. If one root of the equation  $x^2 + kx - 15 = 0$  is  $-3$ , what is the other root?

- (1)  $-2$  (3)  $3$   
(2)  $2$  (4)  $5$

6. In which quadrant does the graph of  $y = \left(\frac{1}{2}\right)^x$  intersect the graph of  $y = x^2$ ?

- (1) I (3) III  
(2) II (4) IV

7. The reciprocal of the expression  $\frac{2}{x} + \frac{3}{1}$  is

- (1)  $\frac{2+3x}{x}$  (3)  $2x+3$   
(2)  $\frac{x}{2+3x}$  (4)  $2+3x$

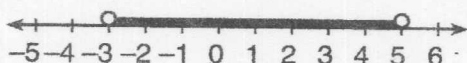
8. The product of  $6x^a$  and  $x$  is

- (1)  $6x^a$  (3)  $6x^{a^2}$   
(2)  $6x^{a+1}$  (4)  $6x^{2a}$

9. If  $i$  is the imaginary unit, the expression  $i^8 + i^9 + i^{10} + i^{11}$  is equivalent to

- (1)  $1$  (3)  $i$   
(2)  $-1$  (4)  $0$

10. Which inequality is represented by the graph below?



- (1)  $x^2 - 2x - 15 > 0$  (3)  $x^2 - 2x - 15 \leq 0$   
(2)  $x^2 - 2x - 15 < 0$  (4)  $x^2 + 2x - 15 < 0$

11. The expression  $\frac{7}{2+3\sqrt{2}}$  is equivalent to

- (1)  $\frac{-2+3\sqrt{2}}{2}$  (3)  $-2+3\sqrt{2}$   
(2)  $\frac{2-3\sqrt{2}}{2}$  (4)  $2-3\sqrt{2}$

12. The roots of the equation  $3x^2 - 4x - 5 = 0$  are

- (1) real, rational, and equal  
(2) real, rational, and unequal  
(3) real, irrational, and unequal  
(4) imaginary

13. Given:  $\log 2 = x$  and  $\log 11 = y$

Express in terms of  $x$  and  $y$ :

- (1)  $\log \sqrt[3]{\frac{2}{11}}$   
(2)  $\log 44$

14. Express the roots of the equation  $x^2 + 1 = 4(x-1)$  in simplest  $a + bi$  form.

15. The expression  $\log \frac{b^3}{a}$  is equivalent to

- (1)  $3(\log b - \log a)$  (3)  $3 \log b - \log a$   
(2)  $\log 3b - \log a$  (4)  $\frac{3 \log b}{\log a}$

16. Solve for  $x$ :  $\frac{x}{x-5} - \frac{2}{x+5} = \frac{50}{x^2-25}$

17. If  $f(x) = 3x + 2$  and  $g(x) = x^2 - 5$ , find the value of  $(f \circ g)(-3)$ .