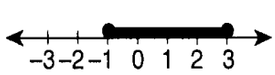
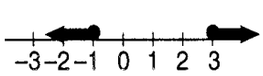
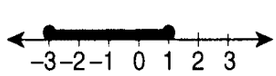
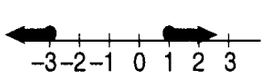
Name	**Algebra 2 and Trig Regents Review #2**
Circle answer and show work.	**Due 2/25/10**
1. If $f(x) = x^0 + x^{\frac{1}{2}} + x^{-1}$, find $f(4)$.	2. Express the sum of $2\sqrt{-9}$ and $7\sqrt{-64}$ in simplest form in terms of i.
3. For which *negative* value of x is the fraction $\frac{x+5}{x^2-x-6}$ undefined?	4. If $f(x) = x^2$ and $g(x) = 2x - 1$, find $(f \circ g)(4)$.
5. Solve for x: $\log_2 x = 3$	6. In which quadrant does the sum of $-4 + 2i$ and $5 - 6i$ lie?
7. Solve for x: $32^x = 4^{(2x+1)}$	8. Which value of c would make the roots of the equation $x^2 + 6x + c = 0$ real, rational, and equal? (1) 9 (3) 18 (2) –9 (4) –18
9. Expressed as a single fraction, $\frac{5}{x-3} - \frac{1}{x}$ is equivalent to (1) $\frac{6x-3}{x^2-3x}$ (3) $\frac{4x+3}{2x-3}$ (2) $\frac{4x+3}{x^2-3x}$ (4) $\frac{4}{x^2-3x}$	10. If x varies inversely as y and y is doubled, then x will be (1) divided by 2 (3) decreased by 2 (2) multiplied by 2 (4) increased by 2
11. What is the solution set for the equation $2x + \|x\| = -2$? (1) {1} (3) {–1} (2) {–2} (4) { }	What is the solution set for the inequality $x^2 - 2x - 3 \leq 0$? (1)  (2)  (3)  (4) 

13.

The domain of $f(x) = x^2 + 2x + 1$ is $-3 \le x \le 3$. The largest value in the range of $f(x)$ is

(1) 20
(2) 16
(3) 3
(4) 4

14.

For the equation $\sqrt{x+21} = x + 1$, the solution set for x is

(1) { }
(2) {–5}
(3) {–5,4}
(4) {4}

15.

The graph of the equation $y = -(4)^x$ lies in Quadrants

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

16.

The graph of the equation $y^2 - x^2 = 4$ forms

(1) a circle
(2) an ellipse
(3) a hyperbola
(4) a parabola

17.

Which quadratic equation has roots of $3 - i$ and $3 + i$?

(1) $x^2 + 6x + 10 = 0$
(2) $x^2 + 6x + 8 = 0$
(3) $x^2 - 6x + 8 = 0$
(4) $x^2 - 6x + 10 = 0$

18.

Express the roots of the equation $2x^2 + 4x + 5 = 0$ in simplest $a + bi$ form. [4]

19

Perform the indicated operations and express in lowest terms:

$$\frac{x^2-9}{2x+4} \cdot \frac{x^2+7x+10}{x^2-3x-18} \div \frac{x^2+2x-15}{2x^2-12x} \quad [6]$$

20.

Solve for x to the *nearest hundredth*:

$$\log_7 75 = x \quad [3]$$

21.

If $\tan x = -\sqrt{3}$, in which quadrants could angle x terminate?

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

22.

If $\sin x = -\frac{\sqrt{2}}{2}$ and $\cos x = \frac{\sqrt{2}}{2}$, the measure of angle x is

(1) 45°
(2) 135°
(3) 225°
(4) 315°