

Student ID		

Last Name: _____

First Name: _____

Show all your work.
If necessary, use extra sheets.

When appropriate,
BOX your final answer.

M\$5
Homework

33

<p>1. The domain of the equation below is all real numbers</p> $y = \frac{1}{(x-1)^2}$ <p>(1) greater than 1 (3) less than 1 (2) except 1 (4) except 1 and -1</p>	<p>2. If $f(x) = kx^2$ and $f(2) = 12$, then what is the value of k?</p>
<p>3. What is the domain of $f(x) = \frac{1}{\sqrt{4-x^2}}$?</p> <p>(1) $x < 2$ (3) $-2 < x < 2$ (2) $x \leq 2$ (4) all real numbers</p>	<p>4. The domain for $f(x) = x^2 - 3$ is $0 \leq x \leq 4$. The smallest value in the range of $f(x)$ is</p> <p>(1) 0 (3) -3 (2) 16 (4) 4</p>
<p>5. Find all values of x for which $f(x)$ is undefined.</p> $f(x) = \frac{4}{ x - 2}$	<p>6. If $f(x) = \frac{2}{x+3}$ and $g(x) = \frac{1}{x}$, find $(g \circ f)(x)$ in simplest form.</p>
<p>7. Write a quadratic equation with integral coefficients whose roots are $\frac{1+\sqrt{2}}{2}$ and $\frac{1-\sqrt{2}}{2}$.</p>	<p>8. Given the number $a + bi$ with $b = 0$, which must be true?</p> <p>(1) It is a real number. (2) It is a rational number. (3) It is a pure imaginary number. (4) It is an imaginary number.</p>

9. Which equation has rational roots?

- (1) $x^2 + 8x - 8 = 0$
- (2) $x^2 + 8x + 9 = 0$
- (3) $2x^2 + 4x + 5 = 0$
- (4) $3x^2 + 8x + 4 = 0$

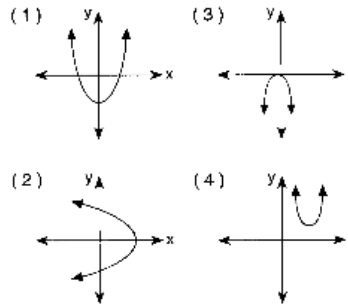
10. Express the multiplicative inverse in simplest

$a + bi$ form: $\frac{-2 - 3i}{3 + 2i}$

11. Solve for z : $\sqrt{z} - 3 = \sqrt{z - 27}$

12. a) Which diagram could represent the graph of an equation with imaginary roots?

b) Which diagram does *not* represent a function?



13. If $f(x) = 2x^2 + 4$ and $g(x) = x - 3$, find all values of x that satisfy the equation $f(x) = (f \circ g)(x)$.