

Student ID		

Last Name: _____

First Name: _____

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

When appropriate,
BOX your final answer.

M\$5
Homework

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<p>1. If $f(x) = 5x^2$ and $g(x) = \sqrt{2x}$, what is the value of $(f \circ g)(8)$?</p> <p>(1) $8\sqrt{10}$ (3) 80 (2) 16 (4) 1,280</p>	<p>2. If $f(x) = x + 1$ and $g(x) = x^2 - 1$, the expression $(g \circ f)(x)$ equals 0 when x is equal to</p> <p>(1) 1 and -1 (3) -2, only (2) 0, only (4) 0 and -2</p>
<p>3. If f and g are two functions defined by $f(x) = 3x + 5$ and $g(x) = x^2 + 1$, then $g(f(x))$ is</p> <p>(1) $x^2 + 3x + 6$ (3) $3x^2 + 8$ (2) $9x^2 + 30x + 26$ (4) $9x^2 + 26$</p>	<p>4. If $f(x) = x^2$, what is the value of $f(\sqrt{-8})$?</p>
<p>5. If $h(x) = 2 - \frac{x}{2}$, find $(h \circ h^{-1})(2)$.</p>	<p>6. If $g(x) = \{(5, -3), (3, -5), (1, -7), (-4, -7), (-5, 10)\}$, which statement is <i>false</i>?</p> <p>(1) $2 \cdot g(3) = g(1) - 3$ (3) $\frac{g(-4) - 1}{g(3)} = -2$ (2) $g(5)g(1) = 21$ (4) $-g(5) - g(-5) = g(-4)$</p>
<p>7. If a function is defined by the equation $y = 3x + 2$, which equation defines the inverse of this function?</p> <p>(1) $x = \frac{1}{3}y + \frac{1}{2}$ (3) $y = \frac{1}{3}x - \frac{2}{3}$ (2) $y = \frac{1}{3}x + \frac{1}{2}$ (4) $y = -3x - 2$</p>	<p>8. What is the domain of $h(x) = \sqrt{x^2 - 4x - 5}$?</p>

9. Which term describes the roots of the equation

$$2x^2 + 3x - 1 = 0?$$

- (1) rational (3) equal
(2) irrational (4) imaginary

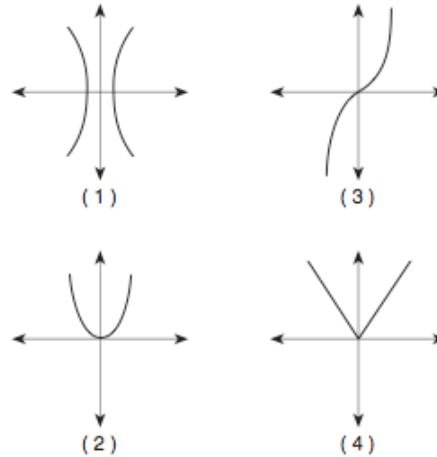
10. Which quadratic equation has roots of $3-i$ and $3+i$?

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

11. Which relation is a one-to-one function?

- (1) $\{(x, y), (x, z), (x, a)\}$
(2) $\{(x, y), (y, z), (z, y)\}$
(3) $\{(x, z), (y, z), (a, y)\}$
(4) $\{(x, y), (y, z), (z, a)\}$

12. Which diagram represents a one-to-one function?



13. Solve for x and express the roots in simplest $a + bi$ form : $4x + \frac{3}{x} = 6$

14. State the solution set of the quadratic inequality and graph the solution set on a number line:

$$2x^2 + 3x - 20 > 0$$