

M\$5 Homework 62

Show all work on a separate sheet.

- 1 What is the solution set of $|4x + 8| > 16$?
- (1) $\{x \mid -6 < x < 2\}$
 - (2) $\{x \mid -2 < x < 6\}$
 - (3) $\{x \mid x < -6 \text{ or } x > 2\}$
 - (4) $\{x \mid x < -2 \text{ or } x > 6\}$
- 2 In the set of real numbers, what is the domain of $f(x) = \frac{4x}{\sqrt{x-4}}$?
- (1) $x > 0$
 - (2) $x < 4$
 - (3) $x \geq 4$
 - (4) $x > 4$
- 3 Given: $f(x) = \sqrt{2x+5}$ and $g(x) = 6x-3$
Find:
- (1) $g(f(10))$
 - (2) $(f \circ g)(x)$
- 4 What is the sum of the roots of the equation $2x^2 - 13x + 17 = 0$?
- (1) $-\frac{13}{2}$
 - (2) $\frac{13}{2}$
 - (3) $-\frac{17}{2}$
 - (4) $\frac{17}{2}$
- 5 Solve for x and express the roots in simplest $a + bi$ form: $9x + \frac{2}{x} = -6$
- 6 The graph of the equation $x^2 + 2y^2 = 5$ is
- (1) a circle
 - (2) an ellipse
 - (3) a parabola
 - (4) a hyperbola
- 7 The expression $\frac{x + \frac{x}{y}}{1 + \frac{1}{y}}$ is equivalent to
- (1) x
 - (2) $2x$
 - (3) $\frac{x}{y}$
 - (4) $x + 1$
- 8 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
- 9 Which equation is the inverse of $y = 13x + 2$?
- (1) $y = 2x + 13$
 - (2) $y = -13x - 2$
 - (3) $y = \frac{x-2}{13}$
 - (4) $y = \frac{x-13}{2}$
- 10 What is the solution set of the inequality $-2x^2 + 3x + 5 > 0$?
- (1) $\{x \mid -1 < x < 2.5\}$
 - (2) $\{x \mid -2.5 < x < 1\}$
 - (3) $\{x \mid x < -1 \text{ or } x > 2.5\}$
 - (4) $\{x \mid x < -2.5 \text{ or } x > 1\}$
- 11 If one root of the equation $x^2 + kx - 15 = 0$ is -3 , what is the other root?
- (1) -2
 - (2) 2
 - (3) 3
 - (4) 5
- 12 If x varies inversely as y , and $x = -34$ when $y = -2$, find x when $y = 4$.
- 13 Which equation has roots $3 - i$ and $3 + i$?
- (1) $x^2 - 10x + 6 = 0$
 - (2) $x^2 + 10x - 6 = 0$
 - (3) $x^2 + 6x + 10 = 0$
 - (4) $x^2 - 6x + 10 = 0$
- 14 If i is the imaginary unit, the expression $i^8 + i^9 + i^{10} + i^{11}$ is equivalent to
- (1) 1
 - (2) -1
 - (3) i
 - (4) 0