

BRONX COMMUNITY COLLEGE
of the City University of New York

DEPARTMENT OF MATHEMATICS & COMPUTER SCIENCE

MTH6 Review Sheet I

1. Perform the indicated operations and simplify:

(a) $(-7) - (-4)$ (b) $(-7) + 14$ (c) $8 \div 0$ (d) $0 \div 2$ (e) $24 \div (-3)$

(f) $5(-7)$ (g) -2^4 (h) $(-2)^4$ (i) $\frac{-12}{-4}$ (j) $\left(\frac{2}{5}\right)\left(-\frac{1}{4}\right)$

(k) $2 - \frac{1}{5}$ (l) $\frac{1}{3} \div (-2)$ (m) $\left(-3\frac{5}{6}\right)\left(1\frac{3}{4}\right)$ (n) $-2\frac{3}{4} + 1\frac{2}{3}$

2. Perform the indicated operations and simplify:

(a) $(-7)(-6)(-3)$ (b) $2^3 - 3^2 + (3)(4)$ (c) $5 - 3 - [2 - (-3 + 5)]$ (d) $16 - 7 - 9 + 11$

(e) $5 \cdot 2^3 - 3$ (f) $3 - 2[1 - (2 - 9)]$ (g) $\frac{-3 + 5}{-5 + 4} - 3 + 6$ (h) $\frac{3}{4}(17 - 3 \cdot 3)$

3. Evaluate:

(a) $C = \frac{5}{9}(F - 32)$, if $F = 50$.

(b) $3a + bx - cy$, if $a = -2$, $b = 3$, $c = -4$, $x = 1$, $y = 0$.

(c) $5a + x^2 - by$, if $a = -2$, $b = 4$, $x = 16$, $y = -6$.

(d) $-x^2 - 2x - 5$, if $x = \frac{1}{2}$.

4. Solve:

(a) $11 + 3x = 26$ (b) $5x - 3 = 3x + 3$ (c) $x - 4 + 2x = 5x - 1 - 2x$

(d) $|x + 2| = 5$ (e) $\frac{x + 2}{5} - \frac{x + 3}{4} = \frac{5}{2}$ (f) $3(2x - 1) - (7x + 1) = 3(3x - 4)$

5. Solve for the indicated variable:

(a) $C = \frac{5}{9}(F - 32)$, for F (b) $z = 5x - 7y$, for x (c) $3x - 2y = 7$, for y

6. Solve the inequality and graph the solution set :

(a) $2x + 1 \leq 4x - 3$ (b) $3x - 2 > x$ (c) $2x - (3x + 5) > 4x - 2(3x - 2)$
(d) $|2x - 3| \geq 7$ (e) $2x \leq |x - 3|$

7. Sketch the graph of the linear equation:

(a) $3x + 2y = 6$ (b) $y = 2x - 3$ (c) $x = 3$

8. State the domain and the range of the relation $(1, -2), (3, 5), (4, 2), (3, -2)$, and determine whether it is a function.

9. Function f is given by $f(x) = 7x - 8$. Find

(a) $f(3)$ (b) $f(a + 5)$ (c) $f(3t)$

10. Function f is given by $f(x) = 3x^2 - 5x + 3$. Find

(a) $f(1)$ (b) $f(3)$ (c) $f(-2)$

11. Solve the system of equations.

(a) $\begin{cases} 2x + 3y = 13 \\ 3x + 2y = 12 \end{cases}$ (b) $\begin{cases} 2x + 3y = 13 \\ 6x + 9y = 15 \end{cases}$ (c) $\begin{cases} 2x + 3y = 2 \\ 4x - 3y = 1 \end{cases}$ (d) $\begin{cases} y = 4x - 3 \\ 3x - y = 1 \end{cases}$

12. Perform the indicated operations :

(a) $(3x^2 - 2x + 3) + (-2x^2 + 3x - 7)$ (b) $2x^2 - 4x + 5 - (3x^2 - 11x + 6)$ (c) $(4a^2b^3)^2$
(d) $(3x^2y^5)(5xy^3 - 3x^2y^2 + 2x^3y^2)$ (e) $(x^2 - 3x + 2)(2x^2 - 3x + 7)$ (f) $\frac{3ab^{-1} \cdot 5a^3b^2}{(3a^3b)^2}$

13. Simplify and write the answer in decimal form.

(a) 3.5×10^{-3} (b) $(2 \times 10^3)(6 \times 10^{-1})$ (c) $\frac{2 \times 10^3}{5 \times 10^6}$