

## Assessment # 3- Intermediate Algebra Diagnostic Assessment (Sample problems)

This is a sample of some of the types of problems you will find on the Intermediate Algebra Diagnostic assessment given on the specific Assessment dates. The actual assessment consists of 45 questions –you will have 45 minutes and will not be allowed to use a calculator. Print this assessment and try the problems, without a calculator, giving yourself about 25 minutes. The answer key is at the end of the example assessment.

**PLEASE NOTE: CALCULATORS ARE NOT ALLOWED AT ASSESSMENT TESTING. IT IS BEST TO STUDY WITHOUT THE AID OF A CALCULATOR.**

### Elementary operations

1.  $2x - 3[2x - (3 - 4x)] =$   
 (A)  $8x - 9$                       (B)  $-8x + 3$                       (C)  $9 - 16x$                       (D)  $12x^2 - 24x + 9$

### Rational expressions

2.  $\frac{x^2 + 4x}{x^2 + 4} \cdot \frac{(x+2)^2}{x^2} =$       (A)  $\frac{(x+2)^2}{x}$       (B)  $\frac{x+4}{x}$       (C)  $4x$       (D)  $\frac{(x+4)(x+2)^2}{x^3 + 4x}$

### Exponents and radicals

3.  $\frac{x^{6a} x^2}{x^{2a}} =$       (A)  $x^5$       (B)  $x^{4a+2}$       (C)  $x^6$       (D)  $x^{10a}$
4.  $\sqrt[3]{4\sqrt[3]{12}} =$       (A)  $4\sqrt[3]{3}$       (B)  $2\sqrt[3]{6}$       (C)  $\sqrt[6]{48}$       (D)  $2\sqrt[3]{2}$

### Linear equations and inequalities

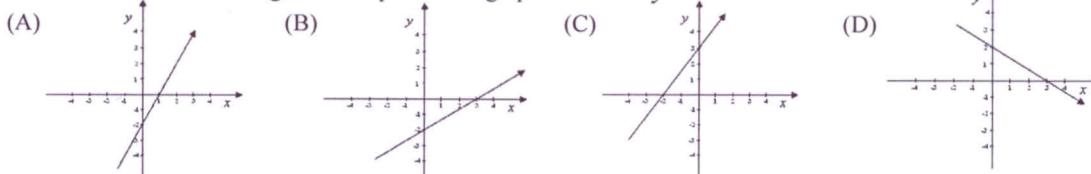
5. If  $\begin{cases} 2x + y = 8 \\ x - y = 1 \end{cases}$ , then  $y =$       (A) 3      (B) 5      (C) 2      (D) There are no solutions for  $y$ .

### Quadratic polynomials, equations, and inequalities

6. The solutions to  $y^2 - 2y + 3 = 0$  are:  
 (A)  $1 \pm i\sqrt{2}$       (B) 3 and  $-1$       (C)  $\pm 2\sqrt{2}i$       (D)  $1 \pm 2\sqrt{2}$

### Graphing and the coordinate plane

7. Which of the following could be part of the graph of  $2x - 3y = 6$ ?



### Logarithms and functions

8. If  $f(x) = \frac{x^2 + 5}{x - 1}$ , then  $f(-3) =$       (A)  $\frac{-7}{2}$       (B) 1      (C)  $-7$       (D)  $\frac{14}{3}$
9. If  $\log_2(x) = 3$ , then  $f(x) =$       (A)  $\sqrt[3]{2}$       (B) 6      (C) 8      (D) 9

### Word problems

10. If  $\frac{2}{3}$  is  $\frac{1}{2}$  of  $\frac{4}{5}$  of a certain number, then that number is  
 (A)  $\frac{15}{4}$       (B)  $\frac{5}{3}$       (C)  $\frac{5}{6}$       (D)  $\frac{5}{12}$

ANSWERS: (1) C (2) D (3) B (4) B (5) C (6) A (7) B (8) A (9) C (10) B