

**SANTA BARBARA CITY COLLEGE**  
**TEST #3 – SAMPLE QUESTIONS**

This test will assess your intermediate algebra skills for placement into **STATISTICS/BEHAVIORAL SCIENCES** (Psych 150), **ELEMENTARY STATISTICS** (Math 117), **COLLEGE ALGEBRA** (Math 120), **CALCULUS FOR BUSINESS, BIOLOGICAL AND SOCIAL SCIENCES** (Math 130), and **PRE-CALCULUS I** (Math 137). Eligibility for these courses will be based on scores achieved on the 45-minute, 45-item Intermediate Algebra Test. *More extensive study packets are available at the Campus Bookstore.*

**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)  $\sqrt[3]{48}$     (D)  $2\sqrt[3]{2}$

Linear equations and inequalities

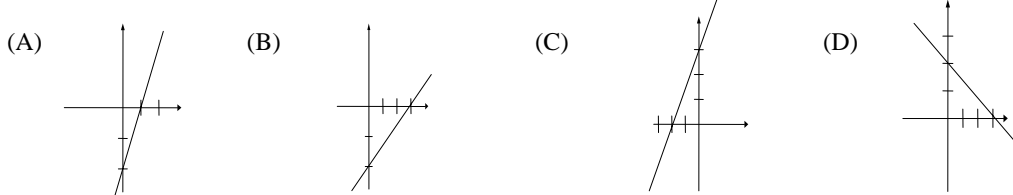
5. If  $2x + y = 8$   
 $x - y = 1$ , then  $y =$     (A) 3    (B) 5    (C) 2    (D) There are no solutions for  $y$ .

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  $x =$   
(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)  $\frac{5}{12}$