INTERMEDIATE ALGEBRA ASSESMENT SAMPLE

You have up to 1 hour to complete **25 multiple choice questions**.
Calculators and dictionaries are NOT allowed.

PART A Fundamental Concepts and Operations

1. $\frac{.0045}{.09}$ is equal to: 1._____

2. ½ % of 8000 is: 2._____

3. If x = 3 the value of $x^{-4} + 5x^{0}$ is: 3._____

4. Which of the following is TRUE? 4._____

   a) $\sqrt{49} - \sqrt{25} = \sqrt{24}$ b) $(\sqrt{7} - \sqrt{3})^2 = 10$

   c) $(3 + a)^3 = 27 + a^3$ d) $-(a - b) = b - a$

5. Find the measure of the hypotenuse of a right triangle if one leg is 8 and the other leg is 6. 5. _____

PART B Simplifying Algebraic Expressions

1. Multiply and simplify: $(a - b)^2 - a(a - 2b)$ 1. _____

2. Simplify: $\frac{(-9x^{-2}y)^2}{-3x^{-2}y^2}$ 2. _____

3. Express the quotient in lowest terms:
$$\frac{3x+9}{x^2-9} \div \frac{x+3}{x^2-6x+9}$$ 3. _____

4. Simplify: $\frac{2}{a-b} - \frac{2}{a+b} + \frac{4b}{a^2-b^2}$ 4. _____

5. Express in a simple radical form: $\sqrt{\frac{2}{3}} + \frac{1}{3}\sqrt{24}$ 5. _____

PART C Solving Equations

1. $8 - 2(3 - 2x) = 4 - (5 - x)$ 1. _____

2. $\frac{2x-1}{3} - \frac{x-6}{4} = 2$ 2. _____

3. $2y^2 - 7y = 15$ 3. _____

4. $\sqrt{3x+1} - 7 = 0$ 4. _____

5. Solve for "A" : $h = \frac{2A}{b}$ 5. _____

PART D Linear Equations and Graphing

1. Determine the SLOPE of the line whose equation is $2x + y = 4$ 1. _____

2. Write the equation of the line with slope 3 and passing through the point (2, -1) 2. _____

3. Solve the linear system algebraically: $3x - y = 13$
   $x + 2y = -5$ 3. _____

4. Graph the equation: $2x + y = -5$

5. Graph the equation: $y = 2x^2 - 4$

PART E Solving Word Problems

1. The square of a certain POSITIVE number plus the number itself is 42. Find the number. 1. _____

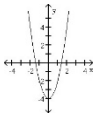
2. The second angle of a triangle is three times as large as the first. The third measures 30° more than the first. Find the measures of the angles. 2. _____

3. A man plans to invest in two types of bonds which yield 7% per year and 9% per year respectively. If he wants to earn $700.00 per year by investing $8,500.00, how much should be put into each type of bond? 3. _____

4. The time "t" taken to travel a certain distance varies inversely as the speed "s". If it takes 5 hours to travel the distance at 60 km/h, find the time taken to travel the same distance at 25 km/h. 4. _____

5. The speed of a passenger train is 20 km/h faster than the speed of a freight train. The freight train travels 150 km in the same time as the passenger train travels 250 km. Find the speed of each train. 5. _____

Answer KEY for Intermediate Algebra

PART A	PART B	PART C	PART D	PART E
1. 5×10^{-2}	1. b^2	1. x = -1	1. m = -2	1. 6
2. 40	2. $\frac{-27}{x^2}$	2. x = 2	2. y = 3x – 7	2. 30°, 90°, 60°
3. $5\frac{1}{81}$	3. $\frac{3(x-3)}{x+3}$	3. y = $-\frac{3}{2}$, 5	3. (3, -4)	3. $3250 at 7%; $5250 at 9%
4. d	4. $\frac{8b}{a^2-b^2}$	4. x = 16	4. 	4. 12 hours
5. 10	5. $\sqrt{6}$	5. A = $\frac{bh}{2}$	5. 	5. Freight 30 km/h Passenger 50 km/h