Math Department Placement Test Skills Review

(Pen & Paper Version)

The Mathematics Department Placement Test has three parts with 17 questions in each part:

Part I- FUNDAMENTALS OF MATHEMATICS Part II - ELEMENTARY ALGEBRA

Part III - INTERMEDIATE ALGEBRA

NOTE: This test is not the computerized placement test available through Advising and Counseling.

The following sample questions are similar to those on the Mathematics Department Placement Test. Review only the material for those courses listed above that you have previously studied.

When you take the Mathematics Department Placement Test, a mathematics instructor will discuss the results with you, and will assist you in preparing a plan of study.

SAMPLE QUESTIONS

PART I – FUNDAMENTALS OF MATHEMATICS

READ EACH QUESTION VERY CAREFULLY.

WHEN TAKING THE ACTUAL PLACEMENT TEST THE USE OF A CALCULATOR IS NOT PERMITTED.

1. Subtract: 7005 - 637

2. Subtract: $5\frac{1}{5} - 3\frac{2}{3}$

3. Subtract and reduce your answer to lowest terms:

$$5\frac{5}{8} - 3\frac{5}{6}$$

4. Divide: 48,900 ÷ 326

5. Divide and reduce your answer to lowest terms:

$$3\frac{2}{3} \div 1\frac{5}{6}$$

6. Divide: $2\frac{1}{3} \div \frac{1}{2}$

7. Add: $\frac{1}{8} + \frac{5}{12} + \frac{4}{9}$

8. Add: 4 + .4 + .04

9. Add: 38 + 3.8 + .38

10. Multiplying: $5\frac{1}{3} \times 1\frac{3}{7}$

11. Multiply: 3.02×5.7

12. 2.3 is what percent of 7?
Round your answer to the nearest tenth percent.

13. The ratio of men to women in a community college is 4 to 5. How many women attend if there are 7600 men?

14. $16\frac{2}{3}\%$ of __?__ is 4

15. If a patient's medication is increased from 3 mg/l to 5 mg/l, what is the percent of increase to the nearest tenth percent?

16. 48 seconds is what part of an hour? (Express your answer in simplest form.)

17. 4.2 deciliters = __?__ dekaliters

18. Solve for x and express your answer in simplest form: $\frac{\frac{1}{3}}{5} = \frac{.3}{x}$

PART II - ELEMENTARY ALGEBRA

1. Perform the indicated operations: -2(5 - 7) - 6

2. Express as a single fraction in simplest form:
$$\frac{x}{2} - \frac{2x + 2y}{4y}$$

3. Solve: 3 - 2(x + 4) = x

4. Solve: $5 - \frac{3x}{4} = 2x$

5. Solve for F: $C = \frac{5}{9}(F - 32)$

6. Perform the indicated operations: $\frac{-6-4(5-7)}{-2}$

7. Solve: 3 – 2(x – 4) = x

8. Solve: $5 - \frac{2(3-x)}{4} = 0$

9. Express as a single fraction in simplest form: $\frac{at}{\frac{a}{r} - a}$

10. Solve: $\frac{3}{4} + \frac{1}{3x} = \frac{2}{x} - \frac{5}{12}$

11. In right triangle BCA, find side b when the hypotenuse c = 4 and side a = 3.

12. Factor completely: $2x^2 - 128$

13. A pharmacist found that she had 8 more prescriptions for antibiotics than she had for tranquilizers. She had 64 prescriptions altogether for these two types of drugs. How many did she have for tranquilizers?

14. Solve for x: $y = \frac{x}{1-x}$

PART III - INTERMEDIATE ALGEBRA

1. Rationalize the denominator and simplify:
$$\frac{\sqrt{8} + 3\sqrt{2}}{5\sqrt{3}}$$

2. Express in simplest form: $(x^3 y^5)^3$

3. Solve this system of equations:
$$2x - y = 4$$
$$3x - 2y = 1$$

4. Solve: $3\sqrt{x} - x = 2$

5. Factor: $4x^2 - 9y^2$

ANSWERS

PART I FUNDAMENTALS OF MATHEMATICS	PART II ELEMENTARY ALGEBRA	PART III INTERMEDIATE ALGEBRA
1. 6368	1. -2	1. $\frac{\sqrt{6}}{3}$
2. $1\frac{8}{15}$	2. $\frac{xy - x - y}{2y}$	2. $x^{9}y^{15}$
3. $1\frac{19}{24}$	3. $x = -\frac{5}{3}$	3. (7,10)
4. 150	4. $x = \frac{20}{11}$ or $1\frac{9}{11}$	4. 1, 4
5. 2	5. $F = \frac{9}{5}C + 32$ or $\frac{9C + 160}{5}$	5. (2x + 3y) (2x-3y)
6. $4\frac{2}{3}$	6. –1	
7. $\frac{71}{72}$	7. $x = \frac{11}{3}$	
8. 4.44	8. x = –7	
9. 42.18	9. $\frac{rt}{1 - r}$	
10. $7\frac{13}{21}$ or $\frac{160}{21}$	10. $x = \frac{10}{7}$	
11. 17.214	11. $\sqrt{7}$	
12. 32.9%	12. 2(x – 8)(x + 8)	
13. 9500 women	13. 28	
14. 24	14. $x = \frac{y}{y+1}$	
15. 66.7%		
16. $\frac{1}{75}$		
17. .042		
18. $4\frac{1}{2}$ or 4.5		

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