

LEVEL 1 – Algebra Readiness Examples

(50 questions – 50 minutes, [Computerized](#))



MDTP
Mathematics Diagnostic
Testing Project

MJC Testing Center, West Campus
Yosemite Hall, Rm. 147
2201 Blue Gum Avenue, Modesto, CA
(N/W corner of Carpenter and Blue Gum)
Phone: 209 575-7728 Directory: 575-6550

Score Course Recommendation

- 0 – 19 Math 10, Introduction to Math
20 – 30 Math 20, Pre-Algebra
31 – 50 Math 70, Elementary Algebra
Math 71, Elementary Algebra 1
Math 50, Business Mathematics
Ag 280, Agricultural Computations

Level 1 Math Examples

Directions: Examine the following problems to see if this is the right level for you. If not, please review the other levels until you find the one that best matches you math skills. Your course recommendations will be based on the actual number of correct answers, and you are allowed to register for a lower course than you place into by registering at the Admissions Office.

Retesting: Please remember that you cannot retest on the same level until after 60 days. Keep in mind that if you have dropped a math class and/or received a “W”, you **cannot** retest.

Integers

1. Jim wrote a check for \$318.00. If his balance was then \$2,126.00, what was his balance before he wrote this check?
a) \$808 b) \$1808 c) \$2444 d) \$5306
2. What number multiplied by 6 gives -18 as a result?
a) -12 b) -3 c) 3 d) -54

Decimals

3. $\frac{7.20}{2.4} =$
a) 0.03 b) 0.30 c) 3.00 d) 30.0
4. Which of the following best approximates $1.147 - 114.7$?
a) -100 b) -10 c) 10 d) 100

Fractions

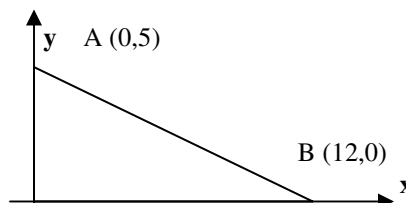
5. The ratio of winning tickets to tickets sold in the California Lottery is $2:5$. If 3,500,000 tickets are sold, how many are the “winners”?
a) 700,000 b) 750,000 c) 1,400,000 d) 1,500,000
6. $\frac{1 + \frac{1}{2}}{1 - \frac{3}{4}} =$
a) -6 b) -2 c) 2 d) 6

Operations

7. If in the formula $p = kt$, $k = 36$ and $p = 144$, then $t =$
a) -5 b) 4 c) 12 d) 108
8. $4(b + 2) =$
a) $4b + 2$ b) $b + 6$ c) $b + 8$ d) $4b + 8$

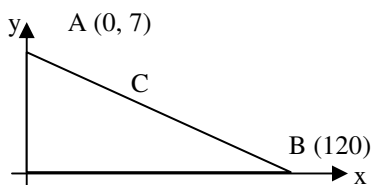
Geometry

9. In the figure shown, what is the length of segment AB?
a) -5 b) 5 c) 13 d) 19



10. If C is the midpoint of segment AB in the figure shown below, then the coordinates of C are:

- a) $(\frac{7}{2}, \frac{7}{2})$ b) $(6, \frac{7}{2})$ c) $(\frac{19}{2}, \frac{7}{2})$ d) $(19, \frac{7}{2})$



- 11. What is the diameter of the circle whose area is 36π ?

- a) 12 b) 18 c) 6π d) 18π

Level 1 Answers: 1. c 2. b 3. c 4. a 5. c 6. d 7. b 8. d 9. c 10. b 11. a

Level 2 – Elementary Algebra Examples

(50 questions – 50 minutes, [Computerized](#))



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Score Recommendation

- 0 - 16 Retest on Level 1: Score too low
17 - 36 Math 70, Elementary Algebra
Math 71, Elementary Algebra 1
Math 50, Business Math
Ag 280, Agricultural Computations
37 - 50 Math 90, Intermediate Algebra
Math 88, Algebra with Applications
Math 80, Plane Geometry

Arithmetic

1. $(0.12)^2 =$
a) 0.00144 b) 0.0144 c) 0.144 d) .024 e) 1.44

Polynomials

2. One of the factors of $x^2 - x - 6$ is:
a) $x + 3$ b) $x + 2$ c) $x - 1$ d) $x - 2$ e) $x - 6$

Linear Equations and Inequalities

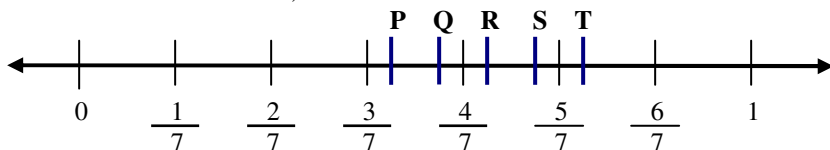
3. If $6x - 3 = 8x - 9$, then $x =$
a) -6 b) -3 c) 3 d) $-\frac{6}{7}$ e) $\frac{6}{7}$

Quadratic Equations

4. What are the possible values of x such that $3x^2 - 2x = 0$?
a) $-\frac{2}{3}$ only b) 0 only c) $\frac{2}{3}$ only d) 0 and $\frac{2}{3}$ e) $-\frac{2}{3}$ and $\frac{2}{3}$

Graphing

5. On the number line below, which letter best locates $\frac{5}{9}$?



- a) P b) Q c) R d) S e) T

Rational Expressions

6. $\frac{2}{w+1} - \frac{1}{w-1} =$
a) $\frac{1}{w+2}$ b) $\frac{1}{w^2-1}$ c) $\frac{w-3}{w^2-1}$ d) $\frac{w+3}{w^2-1}$ e) $\frac{3w-1}{w^2-1}$

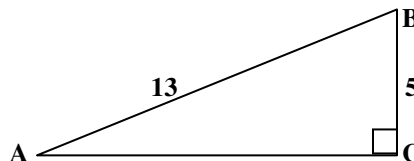
Exponents and Square Root

7. If $x > 0$, then $\sqrt{64x^{16}} =$
a) $8x^4$ b) $8x^8$ c) $16x^4$ d) $32x^4$ e) $32x^8$

Geometry and Measurement

8. In the right triangle shown to the right, what is the length of AC?

- a) 8 b) 12 c) 18 d) $\sqrt{18}$ e) $\sqrt{194}$



Word Problems

9. If x is to 5 as y is to 8, what is the value of x when $y = 2$?
a) $\frac{5}{16}$ b) $\frac{4}{5}$ c) $\frac{5}{4}$ d) $\frac{16}{5}$ e) 5

Level 2 Answers: 1. b 2. b 3. c 4. d 5. b 6. c 7. b 8. b 9. c

You can get more practice for Intermediate Algebra at: <http://mdtp.ucsd/test/.edu>

LEVEL 3 – Intermediate Algebra
(45 questions – 50 minutes, [Computerized](#))



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Score Recommendation

0 - 20 Retest on Level 2: Score too low

21 - 29 Review:

Math 90, Intermediate Algebra

Math 80, Plane Geometry

Math 88, Algebra with Applications

Transfer Level:

30 - 45 Math 101, Mathematics Ideas & Applications

Math 105, Structure of Mathematics I

Math 111, Applied College Algebra

Math 130, Finite Mathematics

Math 134, Elementary Statistics

Elementary Numeric and Algebraic Operations

1. $\frac{c}{d} + 2 =$

- a) $\frac{c+2d}{d}$ b) $\frac{c+2}{d+2}$ c) $\frac{c+2}{d}$ d) $c + 2d$ e) c

Rational Expressions

2. $\frac{c-d}{d} - \frac{1}{c}$

- a) $\frac{c-d}{dc}$ b) $\frac{dc}{c-d}$ c) dc d) $-dc$ e) $\frac{1}{dc}$

Exponents and Radicals

3. $\sqrt{3} + \sqrt{27} =$

- a) 6 b) $3\sqrt{3}$ c) $4\sqrt{3}$ d) $10\sqrt{3}$ e) $\sqrt{30}$

Linear Equations; Inequalities; Absolute Value

4. If $3x + 2y = 8$ and $y = x - 1$, then $x =$

- a) -6 b) $\frac{6}{5}$ c) $\frac{7}{5}$ d) $\frac{9}{5}$ e) 2

Polynomials; Quadratic equations

5. One of the roots of $(x - 2)(3x + 4) = 0$ is

- a) -2 b) $-\frac{4}{3}$ c) $-\frac{3}{4}$ d) $\frac{3}{4}$ e) $\frac{4}{3}$

The Coordinate Plane and Graphing

6. Which of the following is an equation of a line with slope 3 and y-intercept -4 ?

- a) $y = \frac{1}{3}x - 4$ b) $y = 3x - 4$ c) $y = 3x + 4$ d) $y = 4x - 3$ e) $y = 4x + 3$

Functions and Logarithms

7. If $\log_{10} x + \log_{10} y = 3$, then $xy =$

- a) 0.001 b) 1.0 c) 10 d) 100 e) 1000

Word Problems

8. A student who correctly answered 72 questions on a test received a score of 75%.
How many questions were on the test?

- a) 54 b) 72 c) 75 d) 96 e) 104

Level 3 Math Examples

Directions: Examine the following problems to see if this is the right level for you. If not, please review the other levels until you find the one that best matches your math skills. Your course recommendations will be based on the actual number of correct answers, and you are allowed to register for a lower course than you place into by registering at the Admissions Office.

Retesting: Please remember that you cannot retest on the same level until after 60 days. Keep in mind that if you have dropped a math class and/or received a "W", you **cannot** retest.

Level 3 Answers	1.a	2.c	3.c	4.e	5.b	6.b	7.e	8.d
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Level 4 – Pre-Calculus Competency

(40 questions – 60 minutes, *Paper/Pencil Test)

*given separately on different dates and times



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Score Recommendation

- 0 - 19 **Retest on Level 3:** Score too low.
- 20 – 30 **(4A) with** demonstrated Trigonometry skills):
Math 101, Mathematics Ideas & Applications
Math 105, Structure of Mathematics I
Math 111, Applied College Algebra
Math 130, Finite Mathematics
Math 134, Elementary Statistics
Math 121, Pre-calculus I
Math 138, Calculus for Business & Social Sciences
- 30 - 40 **(4B) with** demonstrated Trigonometry skills
You may take any of the above courses or
Math 171, Calculus: First Course

Level 4 Math Examples

Directions: Examine the following problems to see if this is the right level for you. If not, please review the other levels until you find the one that best matches you math skills. Your course recommendations will be based on the actual number of correct answers, and you are allowed to register for a lower course than you place into by registering at the Admissions Office.

Retesting: Please remember that you cannot retest on the same level until after 60 days. Keep in mind that if you have dropped a math class and/or received a “W”, you **cannot** retest.

Elementary Operations with Numerical and Algebraic Fractions

1. $\frac{3x-2}{x+2} - \frac{2}{x-2} =$

- a) $\frac{3}{x+2}$ b) $\frac{3x-4}{x^2-4}$ c) $\frac{3x}{x^2-4}$ d) $\frac{x(3x-10)}{x^2-4}$ e) $\frac{3x(x-4)}{x^2-4x+4}$

Operations with Exponents and Radicals

2. $\frac{x^{3a+2}}{x^{2a-1}} =$

- a) x^{a+3} b) x^{a-3} c) x^{5a-1} d) x^{a+1} e) x^3

Linear Equations and Inequalities

3. For what value of t does $\frac{2t-1}{3t+4} = 2$?

- a) -6 b) $-\frac{9}{4}$ c) $\frac{3}{2}$ d) $\frac{9}{4}$ e) No Value of t satisfying this equation.

Polynomials and Polynomial Equations

4. If $(x-1)(x^2-4) + 2(x-1)(x+2) = (x-1)P$, then P =

- a) x^2-2 b) x^2 c) $x(x+2)$ d) x^2+2 e) $(x+2)^2$

Functions

5. If $f(x) = 2x + 5$ and $g(x) = 1 - x^2$, then $f(g(2)) =$

- a) -3 b) -1 c) 1 d) 2 e) 9

Trigonometry

6. If $\sin \theta = \frac{3}{5}$ and $0 \leq \theta \leq \frac{\pi}{2}$, then $\tan \theta =$

- a) $\frac{3}{2}$ b) $\frac{4}{3}$ c) $\frac{5}{4}$ d) $\frac{4}{5}$ e) $\frac{3}{4}$

Logarithmic and Exponential Functions

7. $\log_3 27 =$

- a) 81 b) 9 c) 3 d) $\frac{1}{3}$ e) $\frac{1}{9}$

Word Problems

8. 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) $\frac{5}{12}$ e) $\frac{4}{15}$

Level 4 Answers 1. d 2. a 3. b 4. c 5. b 6. e 7. c 8. b