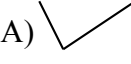





College Level Math [CLM] Placement Test Study Guide

- A magician wants to cut a 12.6 m piece of rope into two pieces so that one piece is three-fourths as long as the other. Find the lengths of the two pieces of rope.
- Solve: $-3(k + 4) - (-4k - 9) = -8$
- Solve for b: $A = \frac{1}{2}(b + t)h$
- Solve: $\frac{x+2}{2} \square \frac{3x \square 12}{10} = 1$
- Find $f(\square 4)$ when $f(x) = x^2 + 5x \square 3$
- The perimeter of a rectangle is 42 ft. One side is 7ft longer than twice the shorter side. Find the dimensions of the rectangle.
- Factor: $x^5 + 5x^4 \square 84x^3$
- Solve: $\frac{2x}{3} = \square 10 \square \frac{24}{x}$
- Lee walks on top of a pole's shadow toward the tip of the shadow of the pole. When Lee is 30 feet from the pole, the tip of the two shadows meet at a point 5 feet in front of Lee. Find the height of the pole given that Lee is 6 feet tall.
- Simplify: $(6x^{\square 4})^3 (x^{\square 2})^{\square 5}$
- Find an equation of the line through $(0, -3)$ and parallel to $-2x + y = 7$
- Find $f(a \square 4)$ when $f(x) = x^2 \square 1$
- Solve and graph: $\frac{7b}{\square 3} > 14$
- Bee was charged \$111 for 3 days and 300 miles, while Mel was charged \$199 for 5 days and 600 miles. What does Best Rental charge per day and per mile?
- Solve: $\sqrt{5x + 24} = x$
- Evaluate: $\prod_{i=1}^3 (i \square 1)(i + 1)$
- Multiply: $\begin{array}{r} \square 1 \\ \square 0 \end{array} \begin{array}{r} 0 \square \square \\ 3 \square \square \end{array} \begin{array}{r} 1 \square \\ 5 \square \end{array}$
- Di's scores on four tests are 85, 73, 90, and 77. What must she score on the next test so that her average will be 82?
- Simplify: $\frac{\square 2^4 z^3 (z^2)^{\square 4}}{20(z^3)^{\square 1}}$
- The sum of two numbers is 43 and their difference is 19. Find the two numbers.
- Solve: $x^2 \square 4x + 4 = 9$
- Simplify: $\frac{m^2 \square 25m}{25 \square m}$
- The base of the right triangle is 21 meters the hypotenuse is 29 meters, find the length of the other leg of the right triangle.
- If the $\sin 42^\circ = w$ then find the $\cos 48^\circ$.
- Find the tangent of an interior equal angle of an isosceles right triangle.
- Factor as completely as possible: $(2x \square 1)(3x \square 8) + 2x \square 1$
- Which of the following is not the graph of a function?
A)  B)  C)  D) 
- Given $f(x) = \frac{x \square 5}{4}$ find $f^{\square 1}(\square 2)$
- Find the amplitude and period of the graph of $y = -3 \cos(\frac{x}{3})$.
- Write an equation of the line that goes through the point $(0, 3)$ perpendicular to $y = \frac{x}{2} \square 1$
- Given $0 = 5x^2 \square 2x \square 3$, find the value of $(x \square \frac{1}{5})^2$.
- Graph: $y = 1 + (x \square 2)^2$
- Find the eighth term of the geometric sequence, if the first term is 3 and the third term is 12.
- Evaluate the determinant: $\begin{vmatrix} 5 & 2 \\ 6 & 3 \end{vmatrix}$

35. Add $f(x)+g(x)$:
 $f(x) = \frac{9}{x^2-1}$, $g(x) = \frac{12}{3x+3}$
36. Solve: $\frac{2y}{y^2} - \frac{4}{y^2} = 4$
37. Solve: $\begin{cases} 4x + 6y = 6 \\ 5x - 2y = -2 \end{cases}$
38. Solve: $\begin{cases} x - 2y = 3 \\ 2x = 4y + 6 \end{cases}$
39. Simplify: $\frac{2 + \frac{6}{x}}{1 - \frac{9}{x^2}}$
40. Add: $\tan \theta + \cot \theta$
41. Solve: $\begin{cases} y = x^2 - 8x + 16 \\ x + y = 6 \end{cases}$
42. Solve: $8 = 2^{x-1}$
43. Divide: $\frac{z^2 + 9z + 14}{z^2 + 12z + 35} \div \frac{z^2 + 2z}{z^2 - 4z - 45}$
44. Solve: $5x^2 + 12x = 4$
45. Simplify: $(\cos \theta + \tan \theta \sin \theta) \div \sec \theta$
46. For what values of x is the given function negative? $f(x) = |x - 3| - 2$
47. Nan invests \$2800 in an account that is compounded continually. How much money will she have after 10 years? [Note: $A = 2800e^{0.065t}$]
48. Find the formula for the n^{th} term of the given sequence: 2, 5, 8, 11, 14, ...
49. The population of coyote at Yosemite is given by: $P = 60e^{0.047t}$. How long will it take for this population of coyote to double?
50. Tom threw an object upward so that its height after t sec is given by: $h(t) = 96t - 16t^2$. Find the number of seconds before the object hits the ground.

ANSWERS

1) 5.4m, 7.2m	2) -5	3) $b = \frac{24}{h} - t$	4) -6	5) -7
6) $16\frac{2}{3}\text{ft} \times 4\frac{2}{3}\text{ft}$	7) $x^3(x+12)(x-7)$	8) -12, -3	9) 42 ft	10) $216/x^2$
11) $y = 2x - 3$	12) $a^2 \mp 8a + 15$	13) $b < -6$	14) \$23/day, 14¢/mi	15) 8
16) 11	17) 85	18) $\frac{4}{5z^2}$	19) 12, 31	20) -1, 5
21) -m	22) 20 m	23) w	24) 1	25) $(2x - 1)(3x - 7)$
26) C	27) -3	28) amp: 3, per: 6π	29) $y = -2x + 3$	30) $1 \leq z \leq 5$
31)	32) 384	33) $\begin{cases} 2 < x < 1 \\ 9 < y < 15 \end{cases}$	34) 3	35) $\frac{4x+5}{x^2-1}$
36) No solution	37) (0, 1)	38) $\{(x, y) \mid x - 2y = 3\}$	39) $\frac{2x}{x-3}$	40) $\sec \theta / \csc \theta$
41) (2, 4), (5, 1)	42) 4	43) $(z - 9)/z$	44) $1.2 \pm 0.4\sqrt{14}$	45) 1
46) $1 < x < 5$	47) \$5363.51	48) $a_n = 3n - 1$	49) $14\frac{3}{4}$ yrs	50) 6 sec