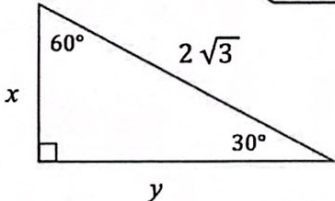


# CALCULUS - DAY ONE!

Name: \_\_\_\_\_



**Circuit Style:** Start your brain training in Cell #1, search for your answer. Label that block as Cell #2 and continue to work until you complete the entire exercise for your Calculus Brain Training.

<p>Answer: <math>\frac{\sqrt{3}}{2}</math></p> <p>Simplify: <math>\frac{3x^2 + 19x + 20}{6x^2 + 31x + 5}</math></p>	<p>#1</p> <p>Answer: <math>y = \frac{2e^x}{e^x - 1}</math></p> <p>If <math>f(x) = x^2 - 5</math>, evaluate: <math>\frac{f(x+h) - f(x)}{h}</math></p>
<p>Answer: <math>(-\infty, 1]</math></p> <p>Simplify: <math>x(2x + 3(x - (3x + 1)))</math></p>	<p>Answer: <math>\{\pm 1, \pm\sqrt{5}\}</math></p> <p>Evaluate: <math>3 \log_2 4 + \frac{1}{2} \log_2 6 - \frac{1}{2} \log_2 24</math></p>
<p>Answer: <math>[-2, 10]</math></p> <p>Find the zeros, given: <math>f(x) = \frac{2x^2 - 2x - 24}{x^2 + 3x - 10}</math></p>	<p>Answer: <math>\frac{3x + 4}{6x + 1}</math></p> <p>Find the point(s) of intersection:  <math display="block">\begin{cases} y = x - 1 \\ x = 3 - y^2 \end{cases}</math></p>
<p>Answer: <math>\frac{x}{2}</math></p> <p>Solve for <math>x</math>:</p> 	<p>Answer: <math>-5</math></p> <p>Solve for <math>x</math>. <math>\ln(x - 2) - 3 \ln 2 = 2</math></p>

Answer: 5

Let  $g(x) = x^2 + bx + c$ . If  $g(2) = 0$   
and  $g(-3) = 0$ , find  $b + c$ .

Answer: 6

State the domain:  $g(x) = -2 + \sqrt{1-x}$

Answer:  $(-1, -2)$   $(2, 1)$

Simplify: Find  $f(g(2))$  given  
 $f(x) = \frac{3}{x}$  and  $g(x) = \frac{1}{\sqrt{x+2}}$

Answer:  $2 + 8e^2$

Evaluate:  $\cos\left(\sin^{-1}\left(\frac{1}{2}\right)\right)$

Answer:  $2x + h$

Solve the inequality:  $-2 < -\frac{x}{2} + 3 \leq 4$

Answer:  $-4x^2 - 3x$

Simplify:  $\frac{x + \frac{1}{2}}{2 + \frac{1}{x}}$

Answer:  $\sqrt{3}$

Find the inverse:  $f(x) = \ln\left(\frac{x}{x-2}\right)$

Answer:  $\{-3, 4\}$

Solve:  $x^4 - 6x^2 + 12 = 7$

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