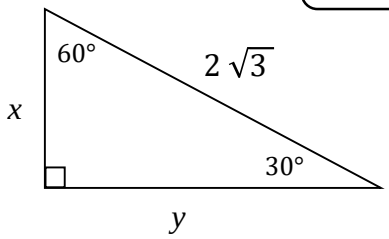
CALCULUS - DAY ONE!

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.

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

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 $f\big(g(2)\big)$ 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: $\dfrac{x + \frac{1}{2}}{2 + \frac{1}{x}}$

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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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.

Answer: $\frac{\sqrt{3}}{2}$

#1

Simplify: $\frac{3x^2+19x+20}{6x^2+31x+5}$

Answer: $y = \frac{2e^x}{e^x - 1}$

#9

If $f(x) = x^2 - 5$, evaluate: $\frac{f(x+h)-f(x)}{h}$

Answer: $(-\infty, 1]$

#5

Simplify: $x\left(2x + 3\left(x - (3x + 1)\right)\right)$

Answer: $\{\pm 1,\ \pm\sqrt{5}\}$

#13

Evaluate: $3\ \log_2 4 + \frac{1}{2}\log_2 6 - \frac{1}{2}\log_2 24$

Answer: $[-2, 10)$

#11

Find the zeros, given: $f(x) = \frac{2x^2-2x-24}{x^2+3x-10}$

Answer: $\frac{3x+4}{6x+1}$

#2

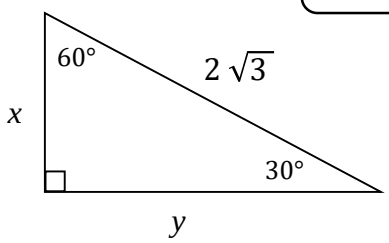
Find the point(s) of intersection:

$$\begin{cases} y = x - 1 \\ x = 3 - y^2 \end{cases}$$

Answer: $\frac{x}{2}$

#7

Solve for x:



Answer: -5

#15

Solve for x. $\ln(x - 2) - 3\ln 2 = 2$

Answer: 5

#14

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

Answer: 6

#4

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

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

#3

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

Answer: $2 + 8e^2$

#16

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

Answer: $2x + h$

#10

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

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

#6

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

Answer: $\sqrt{3}$

#8

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

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

#12

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