PRECALCULUS - 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 Pre-Calculus Brain Training.

Answer: $x^3 - 2x^2 - 5x + 6$

#1

Simplify: $\sqrt{45} \cdot \sqrt{30}$

Answer: $(-2, -6)$ $(3, 14)$

Write the equation of the line that passes through the points $(3, -7)$ and $(-6, -13)$

Answer: $\frac{x^2 + 2xy - y^2}{x^2y^2}$

Factor Completely: $3x^3 - 2x^2 - 8x$

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

State the domain for: $y = \sqrt{x + 3} - 2$

Answer: $y \geq -2|x + 1| + 3$

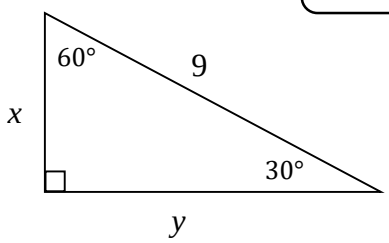
Let $f(x) = x^2 - 4x$ and $g(x) = 2x - 3$.
Find $f(g(5))$.

Answer: $\frac{16x^9}{y}$

Add: $\frac{x - y}{x^2y} + \frac{x + y}{xy^2}$

Answer: 26

Solve for y:



Answer: $x = 3 \pm \sqrt{5}$

Solve the system: $\begin{cases} 3x - y = 7 \\ 3x - 4y = 10 \end{cases}$

Answer: $[-3, \infty)$

Write the cubic polynomial with real zeros at $x = -2, 3, 1$

Answer: $\frac{9\sqrt{3}}{2}$

Simplify: $\frac{(4x^3y^{-2})^2}{(xy)^{-3}}$

Answer: $x(3x + 4)(x - 2)$

Simplify: Find $f(x - 2)$ given $f(x) = x^2 - 3x + 4$

Answer: 21

Solve: $x^2 - 6x + 4 = 0$

Answer: $15\sqrt{6}$

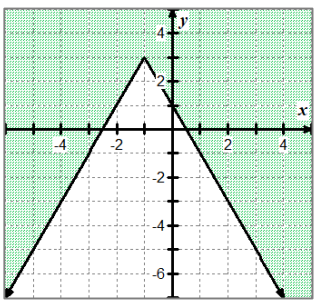
Multiply : $(5 + i)(5 - i)$

Answer: $(2, -1)$

Multiply: $(2x + 3)(x^2 - x + 1)$

Answer: $2x - 3y = 27$

Write the inequality:



Answer: $x^2 - 7x + 14$

Find the point(s) of intersection for $y = x^2 + 3x - 4$ and $y = 4x + 2$

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Answer: $x^3 - 2x^2 - 5x + 6$

#1

Simplify: $\sqrt{45} \cdot \sqrt{30}$

Answer: $(-2, -6)$ $(3, 14)$

#9

Write the equation of the line that passes through the points $(3, -7)$ and $(-6, -13)$

Answer: $\frac{x^2 + 2xy - y^2}{x^2y^2}$

#6

Factor Completely: $3x^3 - 2x^2 - 8x$

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

#15

State the domain for: $y = \sqrt{x + 3} - 2$

Answer: $y \geq -2|x + 1| + 3$

#11

Let $f(x) = x^2 - 4x$ and $g(x) = 2x - 3$.
Find $f(g(5))$.

Answer: $\frac{16x^9}{y}$

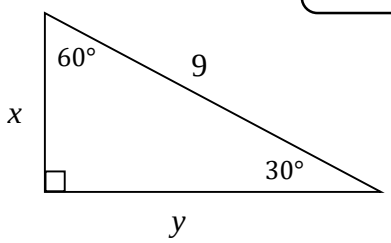
#5

Add: $\frac{x - y}{x^2y} + \frac{x + y}{xy^2}$

Answer: 26

#3

Solve for y:



Answer: $x = 3 \pm \sqrt{5}$

#13

Solve the system: $\begin{cases} 3x - y = 7 \\ 3x - 4y = 10 \end{cases}$

Answer: $[-3, \infty)$

#16

Write the cubic polynomial with real zeros at $x = -2, 3, 1$

Answer: $\frac{9\sqrt{3}}{2}$

#4

Simplify: $\frac{(4x^3y^{-2})^2}{(xy)^{-3}}$

Answer: $x(3x + 4)(x - 2)$

#7

Simplify: Find $f(x - 2)$ given $f(x) = x^2 - 3x + 4$

Answer: 21

#12

Solve: $x^2 - 6x + 4 = 0$

Answer: $15\sqrt{6}$

#2

Multiply : $(5 + i)(5 - i)$

Answer: $(2, -1)$

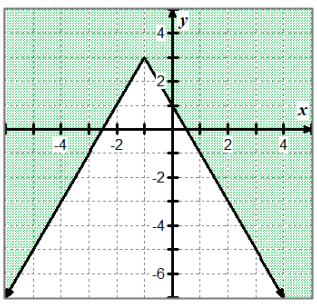
#14

Multiply: $(2x + 3)(x^2 - x + 1)$

Answer: $2x - 3y = 27$

#10

Write the inequality:



Answer: $x^2 - 7x + 14$

#8

Find the point(s) of intersection for $y = x^2 + 3x - 4$ and $y = 4x + 2$