# Pre-Calculus Assessment

1. Simplify.

a) $(5-2i)-(8-7i)$

b) $(3+4i)(6-3i)$

c) $\frac{3-2i}{4+i}$

d) $\sqrt[3]{16x^6y^{10}}$

e) $4\sqrt{8}+7\sqrt{50}$

f) $\sqrt{\frac{2}{5}}$

g) $(5xy^5)^3(8x^3y^7)^0$

h) $(3xy^4)^3(2x^3y^{-5})^{-2}$

i) $\left(\frac{2x^5y^{-2}}{6xy^6}\right)^{-2}$

j) $\frac{x^2-x-12}{x^2-16}\times\frac{x^2+6x+8}{x^2+4x+3}$

k) $\frac{3}{x-4}+\frac{7}{x+5}$

l) $\frac{1+\frac{3}{x-2}}{2+\frac{5}{x-2}}$

2. Factor.

a) $3x^2+10x+3$

b) $2x^3-16$

c) $x^4-13x^2+36$

3. Solve.

a) $x^2 - x - 12 = 0$

b) $2x^2 + x = 5$

c) $x^3 + 4x^2 - 11x = 30$

d) $\sqrt{x+6} = x + 4$

e) $\frac{x}{3} = \frac{x+8}{x+1}$

f) $\frac{2}{x-1} + \frac{5}{x+3} = \frac{9}{x^2+2x-3}$

g) $2(3)^{x-2} = 12$

h) $2x^{3/4} - 5 = 11$

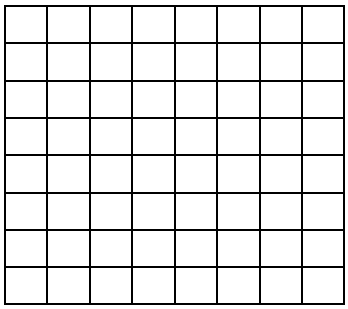
i) $6log_3(x+1) = 12$

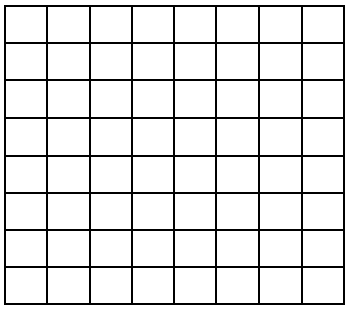
4. Graph.

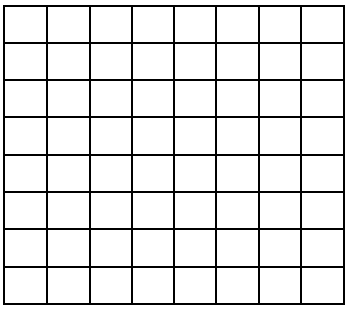
a) $y = \sqrt[3]{x-2} - 4$

b) $(x-2)^2 + y^2 = 4$

c) $y = log_2(x+3) - 1$







5. Write the equation of a line, in slope intercept that is perpendicular to the equation $3x + y = 7$ and goes through the point $(2, -5)$.