

Instructions: Work on this on your own, without consulting your book/the internet/any outside source. No calculators. Give yourself no more than 90 minutes to work on it.

The idea is for the instructors to get a sense for what you can and cannot do at this point in time. Your performance on this pre-test will not affect your grade in the course. If you cannot fully solve a problem, feel free to write about how you think you would solve it if you had the proper mathematical tools, and also feel free to write down related facts/concepts/ideas that you know.

Also, show your work. We're interested in how you arrived at your answers.

You may write on the back if necessary.

1) Find all x such that $x^3 + 3x^2 - 10x = 0$

○ 2) Find all x such that $2x^2 + 5x - 6 = 0$

○ 3) Find all x such that $3x^2 + x + 4 = 0$

4) Find all x such that $x^2 + 2x = 8$

5) Graph the function f , given by $f(x) = x^2 + 3$

6) Graph the function g , given by $g(x) = f(x) + 4$
(see problem 5)

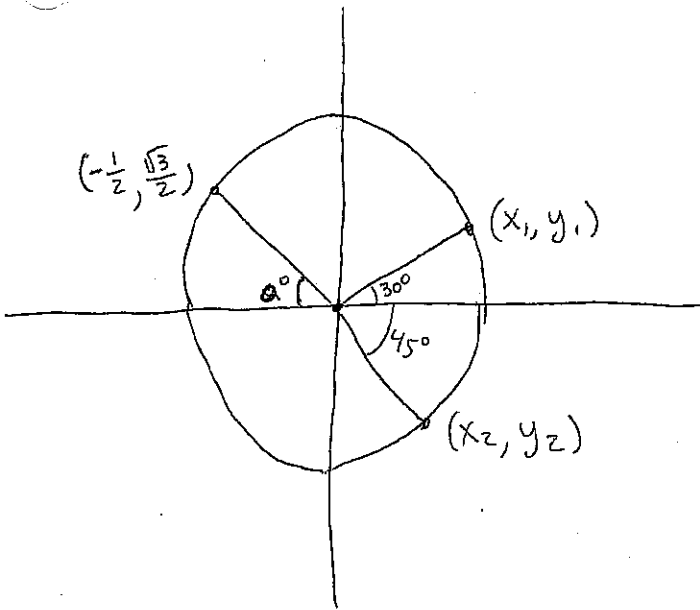
7) Graph the function h , given by $h(x) = f(x+4)$
(see problem 5)

8) Graph the function j , given by $j(x) = \sin(x)$

9) Find all x such that $e^x = 3$

10) Find all x such that $5^{3x+7} = 125$

11) The figure below is meant to be a circle with radius 1 and center $(0,0)$.



Find x_1, y_1, x_2, y_2 , and a .