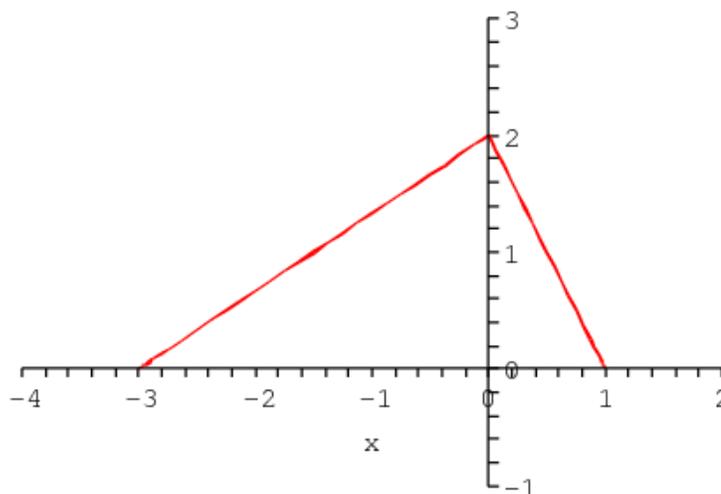


- Make sure you attend the exercise class that you have been assigned to!
- The instructor will present the starred problem in class.
- You should then work on the other problems on your own.
- The instructor and helper will be available for questions.
- Solutions will be available online after the exercise class took place.

- (*)1. Evaluate in terms of radicals $\sin \frac{7\pi}{12}$.
2. Prove the identity $\cos^2 x = \frac{1}{2}(1 + \cos 2x)$.
3. Evaluate in terms of radicals $\cos \frac{\pi}{12}$ [2007 exam question].
4. Find a formula for $f \circ g$ and $g \circ f$ and find the domain and range of each:
- (a) $f(x) = 2 - x^2$, $g(x) = \sqrt{x + 2}$
- (b) $f(x) = \sqrt{x}$, $g(x) = \sqrt{1 - x}$
5. The graph of f is shown below. Draw the graph of each of the following functions:
 (a) $y = f(-x)$, (b) $y = -f(x)$, (c) $y = -2f(x + 1) + 1$, (d) $y = 3f(x - 2) - 2$.



Extra: Graph the equations (a) $|x| + |y| = 1 + x$ and (b) $y + |y| = x + |x|$.