

Problem 1. Let $f(x) = (x - 1)^2 - 2$.

Fill in the table of values, plot these points, and sketch the graph of f .

x	$f(x)$
-2	
-1	
0	
1	
2	
3	
4	

Problem 2. Find the domain of the following functions:

(a) $f(x) = \frac{2}{3-x}$;

(b) $f(x) = \frac{1}{x^2-5x+6}$;

(c) $\{(1, 2), (2, 3), (5, 6), (7, 8)\}$.

Problem 3 (Extra Credit). The locus of the equation $x^2 + y^2 = 25$ is a circle of radius 5 centered at the origin. The line $y = \frac{3}{4}x$ intersects this circle in two points. Find these points. Justify your answer.