

General Notes

1. Set Language and Notation

Union of A and B	$A \cup B$
Intersection of A and B	$A \cap B$
no. of elements in A	$n(A)$
"... is an element of ..."	$\in$
"... is not an element of ..."	$\notin$
complement of set A	A'
Empty set	$\emptyset$
Universal set	E
A is a subset of B	$A \subseteq B$
A is a proper subset of B	$A \subset B$
A is not a subset of B	$A \not\subseteq B$
A is not a proper " " "	$A \not\subset B$

✓

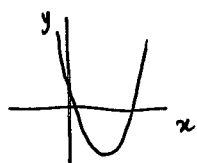
2. Functions

- * To determine if function, vertical line test
- * To determine if one to one function, horizontal line test
- * For inverse to exist, function must be one to one
- * domain of f^{-1} = range of f
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- * graph of inverse of function is reflection of function along line $y = x$

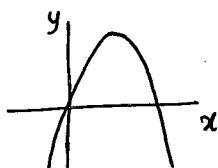
3. Quadratic functions

* for if $y = ax^2 + bx + c$:

$$a > 0$$



$$a < 0$$



* to find roots: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

* line of symmetry: $x = \frac{-b}{2a}$

* for $y = p(x+q)^2 + r$

turning point = $(-q, r)$

* discriminant = $b^2 - 4ac$

$b^2 - 4ac = 0$ real and equal roots

$b^2 - 4ac > 0$ real and distinct roots

$b^2 - 4ac < 0$ no real roots

$b^2 - 4ac \geq 0$ real roots