

# MATH 2554 : 2.6 Review Sheet

## Some Problems From this section I recommend

— Section 2.6 : 17, 22, **28**, 39, **87**

Especially important ones in **bold**

## Key Concepts

**Continuity Checklist** : A function  $f$  will be continuous at  $a$  if  $\lim_{x \rightarrow a} f(x) = f(a)$ , which can be expanded to the following checklist which should be followed in order to determine continuity :

1.  $f(a)$  is defined ( $a$  is in domain of  $f$ )
2.  $\lim_{x \rightarrow a} f(x)$  exists
3.  $\lim_{x \rightarrow a} f(x) = f(a)$

**Intermediate Value Theorem** : Suppose  $f$  is continuous on the interval  $[a, b]$  and  $L$  is a number strictly between  $f(a)$  and  $f(b)$ . Then there exists at least one number  $c$  in  $(a, b)$  satisfying  $f(c) = L$

**Continuity Tip** : If you have to pick up your pencil to draw the function, it's not continuous.