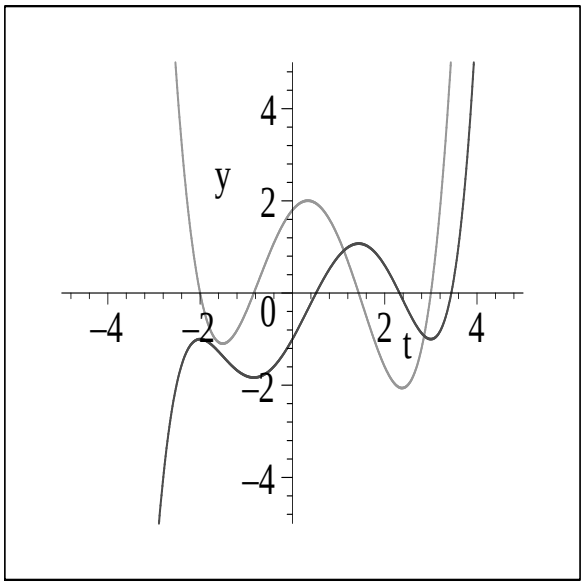
Solutions to Quiz 8

MATH 139-01 and -02
Thursday, October 2, 2003

Be sure to **show your work**. Unsupported answers receive no credit.

1. Below is a graph of the function f. Sketch an approximate graph of the derivative of f on the same axes.

   Solution: The derivative is the W-shaped graph.



2. For the graph in Number 1, determine approximate intervals on which $f''(x)$ is positive and approximate intervals on which $f''(x)$ is negative.

   Solution: f'' is positive where the graph is concave up and negative where it is concave down. It appears that f'' is positive when $-1.5 < x < 0.25$ (roughly) and $x > 2.25$ (roughly). f'' is negative if $x < -1.5$ or $0.25 < x < 2.25$.