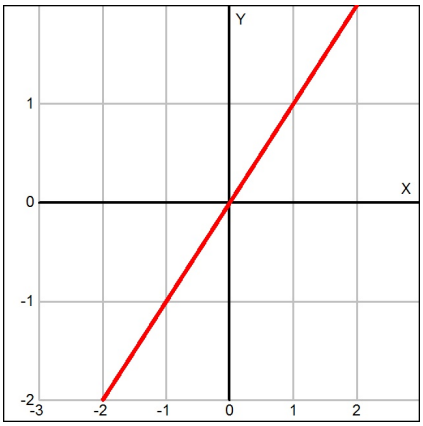
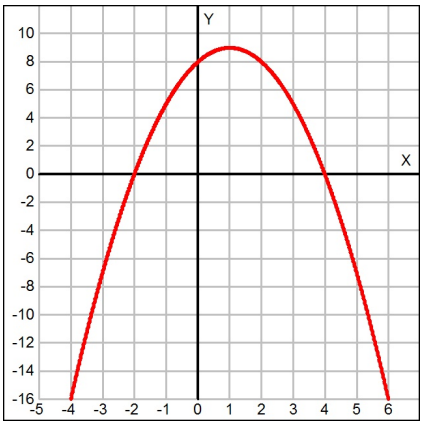
Problems to Analyze a function using the graph of its derivative

1) The figure below shows the graph of the derivative of a function $f(x)$. For this function, find out:
a) Monotonicity (intervals of increase/decrease). **b)** Extreme points (maxima and minima). **c)** Concavity (concave up/down). **d)** Inflection points.



2) The figure below shows the graph of the derivative of a function $f(x)$. For this function, find out:
a) Monotonicity (intervals of increase/decrease). **b)** Extreme points (maxima and minima). **c)** Concavity (concave up/down). **d)** Inflection points.



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Answers:

1) **a)** Decreasing on $(-\infty, 0)$. Increasing on $(0, +\infty)$.
b) Minimum: $x = 0$.
c) Concave upwards on $\Re$.
d) f has no inflection points.

2) **a)** Decreasing on $(-\infty, -2) \cup (4, +\infty)$. Increasing on $(-2, 4)$.
b) Minimum: $x = -2$. Maximum: $x = 4$.
c) Concave upwards on $(-\infty, 1)$. Concave downwards on $(1, +\infty)$
d) Inflection point $x = 1$.