

Exercises

E22.23 Note: From the text [23], pg 84. Consider the curves

[1S1]

$$y = f(x, a) = ax + \frac{a^2}{2}$$

- Find a differential equation solved by all curves. (*Sugg. Eliminate a from the system $y = f, y' = \frac{\partial}{\partial x} f$. The result can be left in non-normal form.*)
- Calculate the envelope; check that it satisfies the differential equation obtained above.

See also the figure 11.

Solution 1. [1S2]

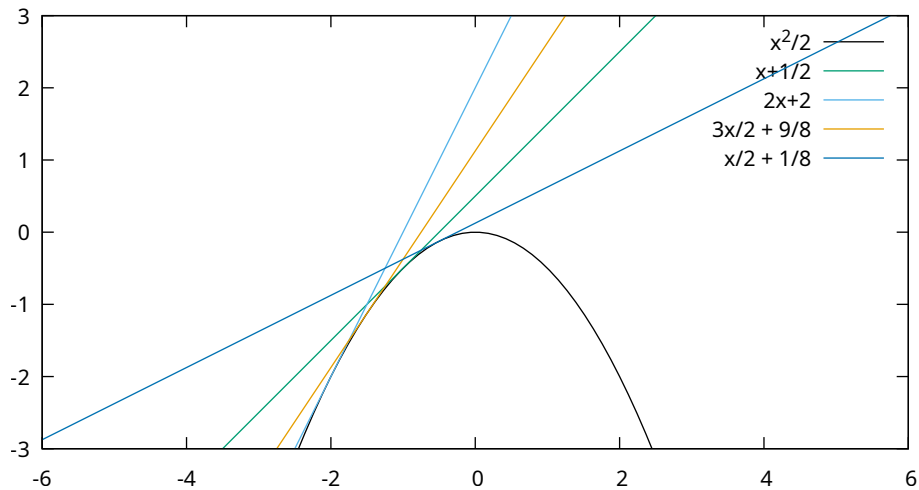


Figure 11: Solution of [1S1]: envelope.