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This is a simple example from [1, Chapter 5, example 5.1.1, page 197] that has only a single upper-level and single lower-level variable. The global optimal solution occurs at the point $(x, y) = (4, 4)$.

$$
\begin{aligned}
&\underset{x,y}{\text{minimise}} && x - 4y \\
&\text{subject to} && x \geq 0 \\
& && y \in \arg\min_{y} \left\{ \begin{array}{ll} y & \\ \text{subject to} & -x - y \leq -3, \\ & -2x + y \leq 0, \\ & 2x + y \leq 12, \\ & 3x - 2y \leq 4, \\ & y \geq 0. \end{array} \right.
\end{aligned}
$$

			Dimension	Type
Upper-level	x	variables	1	real
	F(x,y)	objective	1	linear
	G(x,y)	inequality	1	bounds
	H(x,y)	equality	0	none
Lower-level	y	variables	1	real
	f(x,y)	objective	1	linear
	g(x,y)	inequality	5	linear
	h(x,y)	equality	0	none

References

[1] Jonathan Bard. *Practical Bilevel Optimization: Algorithms And Applications*, volume 30. Springer Science & Business Media, 09 1998.