PROBLEM:	71
CLASSIFICATION:	PPR-P1-3
SOURCE:	Bartholomew-Biggs [4]
NUMBER OF VARIABLES:	$n = 4$
NUMBER OF CONSTRAINTS:	$m_1 = 1$, $m-m_1 = 1$, $b = 8$

OBJECTIVE FUNCTION:

$$f(x) = x_1x_4(x_1 + x_2 + x_3) + x_3$$

CONSTRAINTS:

$$x_1x_2x_3x_4 - 25 \geq 0$$

$$x_1^2 + x_2^2 + x_3^2 + x_4^2 - 40 = 0$$

$$1 \leq x_i \leq 5 \quad , \quad i=1,\ldots,4$$

START:	x_o	=	(1 , 5 , 5 , 1) (feasible)
	$f(x_o)$	=	16
SOLUTION:	x^*	=	(1 , 4.7429994 , 3.8211503 , 1.3794082)
	$f(x^*)$	=	17.0140173
	$r(x^*)$	=	0
	$e(x^*)$	=	.51E-6
	μ	=	2
	$I(x^*)$	=	(1 , 2)
	u^*_{max}/u^*_{min}	=	1.0879/.1615 = 6.74
	$\lambda^*_{max}/\lambda^*_{min}$	=	1.18/1.18 = 1