# linear.xbe

**Attributes**

```
xbe name=linear evaluate=yes
#
# (a1/a2)*y = (b1/b2)*x + (c1/c2)
#
Jacobian: constant
input_vars: x
output_vars: y
aux_vars:
iparms:
sparms:
rparms:
+   a1=1
+   a2=1
+   b1=1
+   b2=1
+   c1=0
+   c2=1
+   a=0
+   b=0
+   c=0
stparms:
igparms:
outparms: x y
```

**Description**

linear_1.gce is used to implement the following relationship between $x$ and $y$:

$$\frac{a_1}{a_2} y = \frac{b_1}{b_2} x + \frac{c_1}{c_2},$$  (1)

where $a_1$, $a_2$, $b_1$, $b_2$, $c_1$, $c_2$ are real parameters. Note that this element can be used, by assigning suitable values to the parameters, to get relationships like $y = a\,x$, $y = x/a$, $y = x + a$.