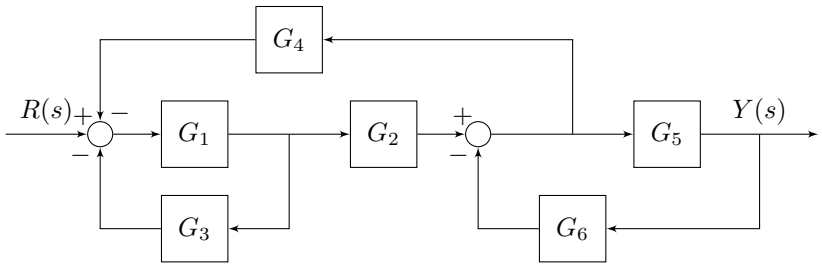
ISS Final test (group 1)

Block diagram transformations

Perform block diagram reduction and determine the single transfer function $\frac{Y(s)}{R(s)}$.



Fuzzy logic

Using the Zadeh s and t-norm and Mamdani's implication, calculate the value of z for given values x and y.

$\mu_A(x) = \{\frac{0.2}{1}, \frac{0.7}{2}, \frac{0.9}{3}, \frac{1.0}{4}, \frac{0.1}{5}\}$
$\mu_B(y) = \{\frac{1.0}{10}, \frac{0.8}{20}, \frac{0.4}{30}, \frac{0.2}{40}, \frac{0.1}{50}\}$
$\mu_N(z) = \{\frac{0.2}{-1}, \frac{0.5}{0}, \frac{1.0}{1}\}$
$\mu_M(z) = \{\frac{0.7}{-1}, \frac{0.9}{0}, \frac{0.2}{1}\}$
$\mu_K(z) = \{\frac{0.2}{-1}, \frac{0.6}{0}, \frac{0.9}{1}\}$

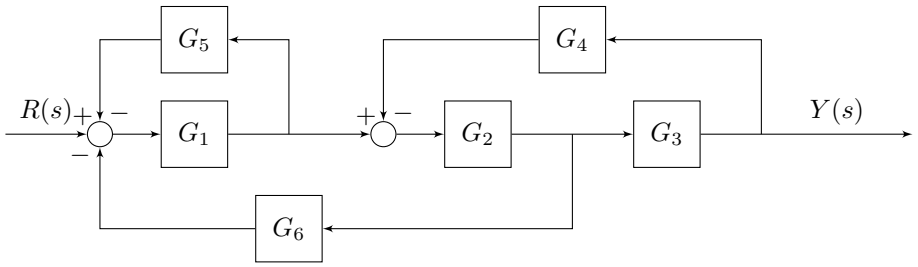
1. if y is $\neg B$ then z is N
2. if x is $A \wedge y$ is B then z is M
3. if x is $\neg A \wedge y$ is B then z is $\neg K$

$x = 2; y = 30; z = ?$

ISS Final test (group 2)

Block diagram transformations

Perform block diagram reduction and determine the single transfer function $\frac{Y(s)}{R(s)}$.



Fuzzy logic

Using the Zadeh s and t-norm and Mamdani's implication, calculate the value of z for given values x and y.

$\mu_A(x) = \{\frac{0.1}{2}, \frac{0.5}{3}, \frac{0.6}{5}, \frac{0.7}{7}, \frac{0.9}{11}\}$
$\mu_B(y) = \{\frac{0.7}{-1}, \frac{0.8}{0}, \frac{0.4}{1}\}$

$\mu_N(z) = \{\frac{0.1}{10}, \frac{0.3}{20}, \frac{0.4}{30}\}$
$\mu_M(z) = \{\frac{0.2}{10}, \frac{0.2}{20}, \frac{0.5}{30}\}$
$\mu_K(z) = \{\frac{0.3}{10}, \frac{0.8}{20}, \frac{0.9}{30}\}$

1. if x is $A \vee y$ is B then z is $\neg N$
2. if x is $\neg A$ then z is $\neg M$
3. if x is $\neg A \wedge y$ is $\neg B$ then z is K

$x = 7; y = 1; z = ?$

ISS Final test (group 3)

Fuzzy logic

Using the Zadeh s and t-norm and Mamdani's implication, calculate the value of z for given values x and y.

$\mu_A(x) = \{\frac{0.2}{1}, \frac{0.3}{2}, \frac{0.7}{3}, \frac{0.9}{4}, \frac{1.0}{5}\}$
$\mu_B(y) = \{\frac{0.0}{1}, \frac{0.2}{2}, \frac{0.3}{3}, \frac{0.4}{4}, \frac{0.6}{5}\}$
$\mu_N(z) = \{\frac{0.2}{15}, \frac{0.4}{45}, \frac{0.7}{60}\}$
$\mu_M(z) = \{\frac{0.9}{15}, \frac{0.8}{45}, \frac{0.4}{60}\}$
$\mu_K(z) = \{\frac{0.2}{15}, \frac{0.5}{45}, \frac{1.0}{60}\}$

1. if x is $A \wedge y$ is B then z is N
2. if y is B then z is $\neg M$
3. if x is $\neg A \vee y$ is $\neg B$ then z is K

$x = 5; y = 3; z = ?$

ISS Final test (group 4)

Fuzzy logic

Using the Zadeh s and t-norm and Mamdani's implication, calculate the value of z for given values x and y.

$\mu_A(x) = \{\frac{0.7}{-2}, \frac{0.5}{-1}, \frac{0.2}{0}, \frac{0.5}{1}, \frac{0.7}{2}\}$
$\mu_B(y) = \{\frac{0.3}{0}, \frac{0.2}{0.1}, \frac{0.2}{0.2}, \frac{0.8}{0.3}\}$
$\mu_N(z) = \{\frac{0.1}{1}, \frac{0.2}{3}, \frac{0.5}{11}\}$
$\mu_M(z) = \{\frac{0.4}{1}, \frac{0.1}{3}, \frac{0.7}{11}\}$
$\mu_K(z) = \{\frac{0.2}{1}, \frac{0.6}{3}, \frac{0.9}{11}\}$

1. if x is A then z is $\neg N$
2. if y is $\neg B \vee x$ is $\neg A$ then z is M
3. if x is $A \wedge y$ is $\neg B$ then z is $\neg K$

$x = -2; y = 0.3; z = ?$