

$$\begin{array}{l}
R \\
+ \\
\forall x, y \in \\
R : \\
x + \\
y \in \\
R \\
\forall x, y, z \in \\
R : \\
x + \\
(y + \\
z) = \\
(x + \\
y) + \\
z \\
\forall x \in \\
R \exists 0_R \in \\
R : \\
x + \\
0_R = \\
x \\
\forall x \in \\
R \exists - \\
x \in \\
R : \\
x + \\
(-x) = \\
0_R \\
\forall x, y \in \\
R : \\
x + \\
y = \\
y + \\
x \\
\forall x, y, z \in \\
R : \\
(x.y).z = \\
x.(y.z) \\
\forall x, y, z \in \\
R : \\
x.(y + \\
z) = \\
x.y + \\
x.z(y + \\
z).x = \\
y.x + \\
z.x \\
(R, +) \\
+ \\
1_R \in \\
R \\
x \in \\
R \\
x.1_R = \\
1_R.x = \\
x \\
x, y \in \\
R \\
x.y = \\
y.x \\
x \in \\
R \\
x^{-1} \in \\
R \\
x.x^{-1} = \\
1_R \\
() \\
R \\
0 \neq \\
a \notin \\
R \\
b \in \\
R \\
ba = \\
0 \\
() \\
) : \\
a, b \\
ab \\
a + \\
(-b) \\
a - \\
b \\
a \in \\
R \\
a0 = \\
0a = \\
0 \\
a, b \in \\
R \\
a(-b) = \\
(-a)b = \\
-ab \\
a, b, x \in \\
R \\
a(b - \\
c) = \\
ab - \\
ac
\end{array}$$