$\mathbb{R}, +$

$p+p=2p$

$p+p+p=3p$

$\underbrace{p+p+\cdots+p}_{n}=np$

$0\cdot p=0$

$(0+0)\cdot p \overset{\text{dist}}{=} 0\cdot p+0\cdot p$

$\quad\ \ \| $ (0 is the additive iden)

$\quad\ 0\cdot p$

$\Rightarrow 0\cdot p+(-0\cdot p)$

$\quad\ \ \|$

$(0\cdot p+0\cdot p)+(-0\cdot p) \overset{\text{assoc}}{=} 0\cdot p+(0\cdot p+(-0\cdot p))$

$\overset{\text{def}}{=} 0\cdot p+0 = 0\cdot p$ (def of 0)

$0 \overset{\text{def of}}{=} 0\cdot p+(-0\cdot p)$

$\mathbb{R}_{>0}, \times$

$a\cdot a=a^2$

$a\cdot a\cdot a=a^3$

$\underbrace{a\cdot a\cdot a\cdot\cdots\cdot a}_{n}=a^n$

$a^0=1$

$$(p-q)+(r-s)$$
$$=(p+r)-(q+s)$$

$$(p-q)-(r-s)$$
$$\parallel$$
$$(p+s)-(q+r)$$

$$-(-p)=p$$

$$\frac{a}{b}\times\frac{c}{d}=\frac{ac}{bd}$$

$$\frac{a}{b}\div\frac{c}{d}=\frac{ad}{bc}$$
$$=\frac{a}{b}\times\frac{d}{c}$$

$$\frac{1}{\frac{1}{a}}=a$$