Properties of Proportions

For positive a, b, c, and d:	In proofs, use this reason:
1. If $\frac{a}{b} = \frac{c}{d}$, then $ad = bc$. Multiply both sides by bd.	Mult. prop. of equality
2. If $\frac{a}{b} = \frac{c}{d}$, then $\frac{a}{c} = \frac{b}{d}$. Multiply both sides by $\frac{b}{c}$.	Mult. prop. of equality
3. If $\frac{a}{b} = \frac{c}{d}$, then $\frac{b}{a} = \frac{d}{c}$. Multiply both sides by $\frac{bd}{ac}$.	Mult. prop. of equality
4. If $\frac{a}{b} = \frac{c}{d}$, then $\frac{a+b}{b} = \frac{c+d}{d}$. Add 1 to both sides, using $1 = \frac{b}{b} = \frac{d}{d}$.	Add. prop. of equality
5. If $\frac{a}{b} = \frac{c}{d}$, then $\frac{a-b}{b} = \frac{c-d}{d}$. Add -1 to both sides, using $1 = \frac{b}{b} = \frac{d}{d}$.	Add. prop. of equality
6. If $\frac{a}{b} = \frac{c}{d}$, then $\frac{a+c}{b+d} = \frac{a}{b}$. Let $\frac{a}{b} = k = \frac{c}{d}$. Then $a = bk$, $c = dk$, and $a + c = k(b + d)$.	Summation prop. of proportions