



作垂線，則 $\frac{a}{c} = \frac{b}{d} = k$ $a=ck$ ， $b=dk$

$$\frac{\overline{AD} - \overline{BD}}{\overline{AB}} = \frac{\overline{AD}^2 - \overline{BD}^2}{\overline{AB}^2} \text{ (分子 分母同乘 } \overline{AD} + \overline{BD} \text{)}$$

欲証 $\frac{CD^2 - BD^2}{BC^2} = \frac{AD^2 - BD^2}{AB^2}$

$$\text{左式} = \frac{(b^2 + c^2) - (b^2 + d^2)}{(c+d)^2} = \frac{c^2 - d^2}{(c+d)^2}$$

右式=

$$\frac{(c^2k^2 + c^2) - (d^2k^2 + d^2)}{(a+b)^2 + (c+d)^2} = \frac{(c^2 - d^2)(1+k^2)}{(c+d)^2(1+k^2)} = \text{左式}$$