

$$\sqrt{B+\sqrt{C}} = \sqrt{F} + \sqrt{G}$$

$$B+\sqrt{C} = F+G+2\sqrt{FG}$$

$$B = F+G$$

$$C = 4F \cdot G$$

WANT $F(B,C)$ AND $G(B,C)$

$$F = B - G$$

$$C = 4G(B - G)$$

$$C = 4BG - 4G^2$$

$$0 = 4G^2 - 4BG + C$$

$$G = \frac{4B \pm \sqrt{16B^2 - 16C}}{2 \cdot 4}$$

CHOOSE

$$G = \frac{B + \sqrt{B^2 - C}}{2}$$

$$F = B - G$$

$$F = \frac{B - \sqrt{B^2 - C}}{2}$$

which was what we wanted