

Convex Hull

Convexity

- Paint Blending

这山之高处，就叫凸碧；山之低洼近水处，就叫作凹晶。这凸、凹二字，历来用的人最少，如今直用作轩馆之名，更觉新鲜，不落窠臼。

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Color Composition

❖ Color, color space & opacity: (c, a) , $0 \leq c < 256$, $0 \leq a \leq 1$

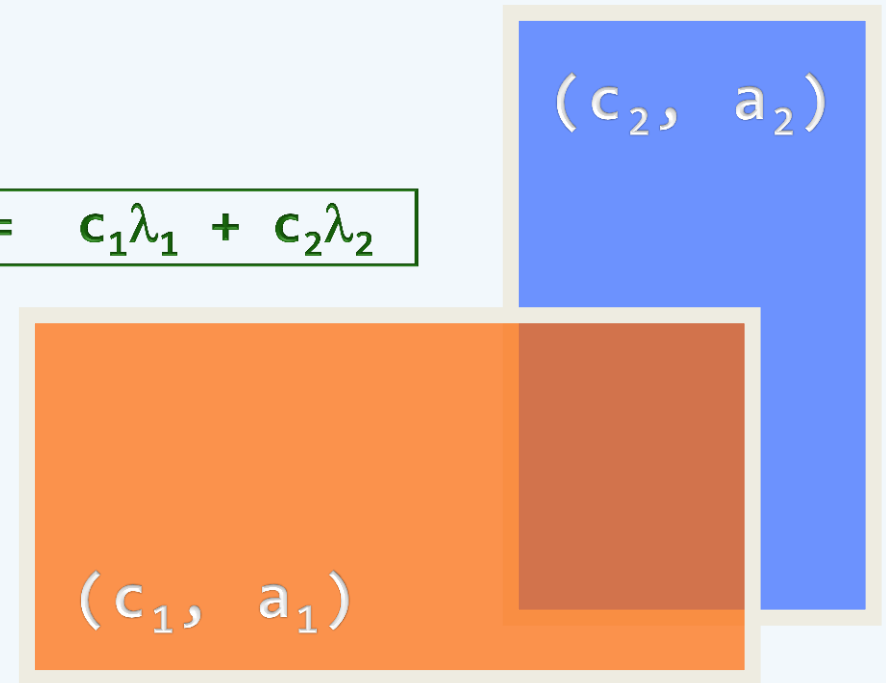
❖ If a piece of glass with (c_1, a_1) is put over another one with (c_2, a_2) , how would the overlay look like?

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$$a = a_1 + a_2(1 - a_1) = a(\lambda_1 + \lambda_2)$$

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$$c = c_1[a_1 / a] + c_2[a_2(1 - a_1)/a] = c_1\lambda_1 + c_2\lambda_2$$

❖ If both c_1 and c_2 are fixed

- is it possible to get a desired color by adjusting a_1 and a_2 ?
- If yes, how?



Mixing Paints

❖ Given a number of paints, how to **mix** them into a desired color?

❖ For simplicity, consider just red (R) and green (G)

Each paint is then defined as $C = (R, G)$

❖ If two paints are available: $X = (10\%, 35\%)$, $Y = (16\%, 20\%)$

can we get by mixing them a paint $U = (12\%, 30\%)$?

❖ How about another mixed paint $V = (13\%, 22\%)$?

❖ Will a third paint $Z = (07\%, 15\%)$ help?

❖ What has all this to do with **geometry**?

