

MATH 403 FALL 2021: HOMEWORK 3

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1. Exercise 1.17
2. Exercise 1.18
3. Exercise 1.20
4. Exercise 1.21
5. Let $A = (1, 1)$, $B = (3, 0)$, $C = (4, 5)$. Let

$$A' = \frac{1}{3}B + \frac{2}{3}C, \quad B' = \frac{4}{9}C + \frac{5}{9}A,$$

and C' be a point on the line joining A and B . Suppose $\ell_{AA'}$, $\ell_{BB'}$, and $\ell_{CC'}$ are concurrent.

- (a) Find C' .
- (b) Let G be the intersection of $\ell_{AA'}$, $\ell_{BB'}$, and $\ell_{CC'}$. Find the barycentric coordinate of G with respect to A, B, C .