The basic lumakeying equation in ImageComposite is: $a_1 \cdot l_1$. This equation is susceptible to noise and blacks that are not completely black, as illustrated. What would be a better equation that would allow you to remove the noise?

$a_1 \cdot (l_1 - a_2)$

2. Provide an equation for lumakeying with an interior garbage mask.

$a_1 \cdot (l_1 - a_2) + l_2$

For the following questions: Let $a_1 = 8$ and $a_2 = 1.5$. Let foreground image color 1 (rgb) be: (0.3, 0.4, 0.5). Let foreground image color 2 (rgb) be: (0.3, 0.4, 0.7). Let the background image color be: (0.5, 0.8, 0.2).

3. What is the value of $\alpha$ for foreground color 1?

$\alpha = 1 - 8 (0.5 - 1.5 (0.4)) = 1.8$
Clamped, that will be 1

4. What is the value of $\alpha$ for foreground color 2?

$\alpha = 1 - 8 (0.7 - 1.5 (0.4)) = 0.2$
Clamped, that will still be 0.2

5. Provide a foreground color other than black that will generate an $\alpha$ value of 0:

How about (0.3, 0.4, 1)
$\alpha = 1 - 8 (1 - 1.5 (0.4)) = -2.2$
Clamped, that will be 0