() Do exercises 3.4.3 (you may assume that the continued fraction converges) and 3.4.4
(1) Prove that the simple continued fraction of a positive real number terminates if and
only if the number is rational.
(2) Find the definition of “in the same ratio” in Euclid (you can view it online by going to
the “Resources” part of the course website), and explain how it relates to Stillwell’s
explanation of “Eudoxus’ idea” on page 53.
(3) Graph the line $4x + 6y = 2$ and put a dot at each point on the line with integer
coordinates. Prove that the set of all integer solutions is $\{(−1 + 3t, 1 − 2t) : t \in \mathbb{Z}\}$.
(4) Given that $(x_0, y_0)$ is one solution in integers to the equation $ax + by = c$, where $a, b, c$
are fixed integers, find a parametrization of the set of all integer solutions, similar to
that in the previous problem. (Hint: consider the difference between two solutions.)