

Math Circle Explorations: Session 2

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Problem 5. Vacillating Mathematician: A mathematician starts walking from her home to the university. She goes a fraction α of the distance and then decides to turn back and walk towards her home. After walking β fraction of the distance, she turns and starts walking towards the university. Again, after α fraction of the distance, she starts returning home and so on. Where will she reach (if at all) eventually?