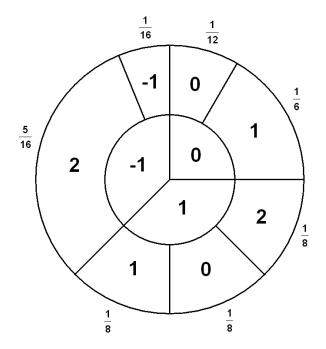
John Slater

1. Consider the following wheel:



Suppose that X is the average of 10 rolls of the inner wheel, Y is the average of 20 rolls of the outer wheel, and Z is the average of 20 rolls of the inner wheel. Find the following:

- (a) E(X)
- (b) E(Y)
- (c) E(Z)
- (d) Which is bigger P(X > 0.5) or P(Z > 0.5)? Explain.
- 2. Suppose two dice are rolled successively. Let X be the sum of the two dice, Y be the difference (first roll minus the second), Z the number of odd rolls and W the number of prime rolls. Find:
  - (a) the ranges of four random variables
  - (b)  $P(X \ge 5)$
  - (c)  $P(X \ge Z)$
  - (d) P(X = 2|Z = 0)
  - (e) P(X = 12|W = 1)
  - (f) E(Z)
  - (g) E(Z+W)
  - (h) Are Z and W independent? Prove or disprove.
- 3. Find the following places on campus and take a picture of yourself there and send it to me.

- (a) The Counseling Center.
- (b) The International Center.