**A basic Risk algorithm**

**[ set-up ]**

1. Initialize the map (e.g., 6 continents, w/ 42 territories is standard)
   1. this will be defined in a map file
2. Initialize the value of continents (Africa 7, Asia 2, Aus. 5, Eur. 5, N. Am. 5, S. Am. 2 is standard)
   1. this will be defined in a map file

Note the token values of armies. Infantry (1), Cavalry (5), Artillery (10)

1. Set how many players (1 human, *n* computers)
2. Distribute total amount of armies (2=40 each, 3 = 35 each, 4 = 30 each)
   1. This will be defined in a map file
   2. Roll dice to establish the initial player for first territory choice. (option: Allow quick start option for randomly distributing all armies.)
3. Place 1 army (and maximum 1) on the 42 territories, clockwise from first chooser.
4. Place additional and remaining armies on any player-owned territories (until remaining armies empty)
5. Roll dice to establish first player for clockwise play. [ bm: this differs from actual rules, but I like it.]

(option: Randomly select order of play from players [ bm: not convinced of this one, since makes it hard for player to plan ahead when he never knows for sure when his turn will come up. Also, this would differ from actual rules. Might be an option feature we can add later.]

**[ Phases of Play ]**

*Getting Armies Phase*

Inquire for any token redemptions (i.e., trade 10 infantry for 1 Artillery)

1. Place new country armies at turn (armies received = num. of owned territories / 3)
2. Place new continent bonus armies at turn (armies received = token continent value)
3. Place minimum of 3 armies given, no matter what.
4. Place received territory and continent bonus armies as desired

*Attacking Phase*

1. Locate for attack adjacent territory *t*.
2. Decide how many times to attack *t*, and when to stop the attack ( 0 attacks allowed.)
3. Alert that *t* is being attacked.
4. Commit how many armies, *n,* to use in attack (2 min, 3 max)
5. Garrison minimum of 1 army left to defend territory
6. Calculate number of attack dice *n*.
7. Calculate number of defense dice *f*.
8. Roll *n* attack dice.
9. Roll *f* defense dice. (1 min, 2 max)
10. Compare highest defender dice with highest attacker dice
11. Remove attacker pieces for any **>=**  defender dice
12. Remove defender pieces for any **>** attacker dice
13. Assert whether territory conquered.
14. Occupy **>=** n armies into conquered territory, if so
15. Assert whether all attacks by player are completed
16. Loop to [play] 5, if attacks not completed. (Get Rixk card for conquering territory (if any).
17. Assert whether enemy territories still available.
18. End game, if no enemy territories available
19. Assert whether enemy territories still available.
20. End game, if no enemy territories available.

*Fortifying Phase*

1. Move any number of pieces from a single territory into an adjacently owned territory.
2. Yield turn to next player
3. Loop to [play] step 1

[end]