

# Introduction to Complexity (Spring 2013)

## 1.10 Submit Unit 1 Homework » Unit 1 Homework

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### Instructions 1

This Homework won't count for the grade -- it's a warm-up.

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### Question 2

In the Ant2 model, with population-size = 100, max-step-size = 10, and max-turn-angle = 60 run the model several times (by clicking and go) to estimate the average number of ticks (time steps) needed to gather all the food. On average, about how many ticks does it take for the ants to gather all the food?

- Less than 100
  - 100 - 200
  - 200 - 600
  - 600 - 1,000
  - More than 1,000
- 

### Question 3

Do the same thing as in problem 1, but this time change population to 50, leaving max-step-size = 10, and max-turn-angle = 60. On average, about how many ticks does it take for the ants to gather all the food? (Run the model several times, clicking setup and go each time, approximate average number of ticks.)

- Less than 100
  - 100 - 200
  - 200 - 600
  - 600 - 1,000
  - More than 1,000
- 

### Question 4

Now leaving population = 50 and max-step-size = 10, change max-turn-angle to 10. On average, about how many ticks does it take for the ants to gather all the food?

- Less than 100
  - 100 - 200
  - 200 - 600
  - 600 - 1,000
  - More than 1,000
- 

### Question 5

Suppose the NetLogo procedure below is part of a model's code. What value would bad-coin-flip? produce if used somewhere else in the model? (Hint, recall our discussion of Ant1.nlogo.)

```
to-report bad-coin-flip?
  report random 1 = 0
end
```

- True or false at random
- Always true
- Always false
- An error message
- None of the above