

Turkey Trouble – Population Growth Rates Simulation-A

Key

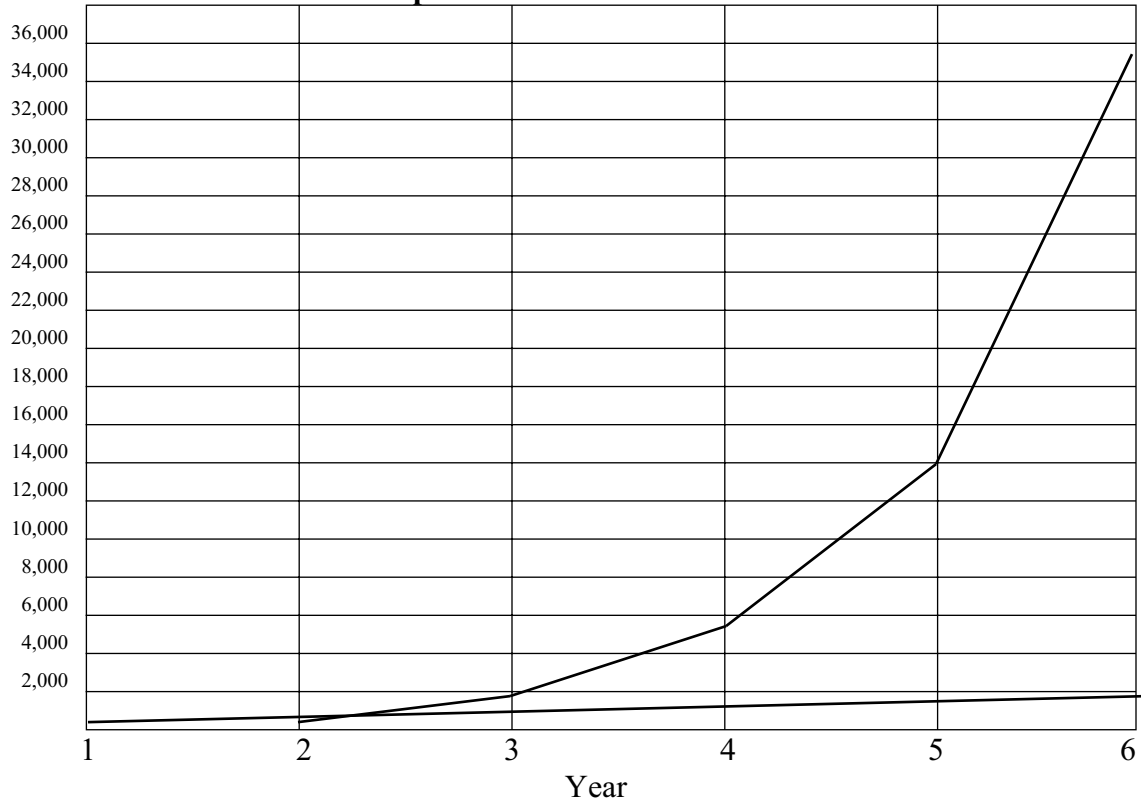
Table 1—Linear Growth

| | Year | | | | | |
|------------|------|-----|-----|-----|------|------|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Population | 46 | 276 | 506 | 736 | 966 | 1196 |
| + increase | 230 | 230 | 230 | 230 | 230 | 230 |
| = total | 276 | 506 | 736 | 966 | 1196 | 1426 |

Table 2--Exponential Growth-A

| | Year | | | | | |
|----------------------------------|------|-----|------|------|-------|-------|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 1. Beginning population | 46 | 276 | 506 | 1886 | 4416 | 13570 |
| 2. – five year olds | 0 | 0 | 0 | 0 | 46 | 230 |
| 3. – last years hatch (#6) | 0 | 230 | 230 | 1380 | 2530 | 9200 |
| 4. = Breeding population | 46 | 46 | 276 | 506 | 1840 | 4140 |
| 5. Breeding pairs (#4/2) | 23 | 23 | 138 | 253 | 920 | 2070 |
| 6. Offspring (#5x10 eggs/clutch) | 230 | 230 | 1830 | 2530 | 9200 | 20700 |
| + breeding population (#4) | 46 | 46 | 276 | 506 | 1840 | 4140 |
| + last year's hatch (#3) | 0 | 230 | 230 | 1380 | 2530 | 9200 |
| 7. = Total population | 276 | 506 | 1886 | 4416 | 13570 | 34040 |

Population vs. Year



Conclusions: (answer on notebook paper)

1. Which population grew at a faster rate? Why?
2. The actual population of Merrimac turkeys in Wyoming after 5 years was 2500. Why the difference? Which of our assumptions proved to true? False?
3. All populations have the potential to grow at an exponential rate. What factors limit this potential?