

Problem set 1 Grading

Aarons: A-

1. Verification of Riley's result (Fig. 21)
Sensitivity for p , R_0 , r , g , $1-N$, $\pm 20\%$
Relative sensitivity of various parameters
Comparison to Riley's 27% error
Not presented
Full marks
A few minor issues in interpretation
Full marks
2. Conditions for P to be periodic
Find a value of g that ensures periodicity
How does the value vary as other parameters are changed?
Full marks
Full marks
Full marks
3. Perturb the periodic model with 20% random variations in Z and discuss
Full marks. Note that in some cases P can show a long-term secular increase.

Abbott: A

1. Verification of Riley's result (Fig. 21)
Sensitivity for p , R_0 , r , g , $1-N$, $\pm 20\%$
Relative sensitivity of various parameters
Comparison to Riley's 27% error
Full marks
Full marks
Full marks
Full marks
2. Conditions for P to be periodic
Find a value of g that ensures periodicity
How does the value vary as other parameters are changed?
Full marks
Full marks
Full marks
3. Perturb the periodic model with 20% random variations in Z and discuss
Full marks. You solved a slightly different problem than was posed: random perturbations were added to both P and Z rather than just Z . In any case, you did a very thorough job. Your solution does not have a long term trend, whereas the perturbations to Z only can result in long term increases and decreases.

Dotzel: A-

1. Verification of Riley's result (Fig. 21)
Sensitivity for p , R_0 , r , g , $1-N$, $\pm 20\%$
Relative sensitivity of various parameters
Comparison to Riley's 27% error
Full marks
Full marks
Full marks
Have you tried interpolating your model solution into the same time grid as the observations prior to computing the error?
2. Conditions for P to be periodic
Find a value of g that ensures periodicity
How does the value vary as other parameters are changed?
Did not answer
Full marks
Did not answer
3. Perturb the periodic model with 20% random variations in Z and discuss

Full marks, excellent analysis.

Fachon: A

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|---|-----------------------|
| 1. Verification of Riley's result (Fig. 21) | Full marks |
| Sensitivity for p, R0, r, g, 1-N, $\pm 20\%$ | Full marks |
| Relative sensitivity of various parameters | Full marks |
| Comparison to Riley's 27% error | Full marks |
| 2. Conditions for P to be periodic | Full marks |
| Find a value of g that ensures periodicity | Full marks |
| How does the value vary as other parameters are changed? | Did not answer |
| 3. Perturb the periodic model with 20% random variations in Z and discuss | |
| Full marks, excellent analysis. | |

Honda: A-

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|---|---|
| 1. Verification of Riley's result (Fig. 21) | Full marks |
| Sensitivity for p, R0, r, g, 1-N, $\pm 20\%$ | A few minor issues in interpretation |
| Relative sensitivity of various parameters | Full marks |
| Comparison to Riley's 27% error | Full marks |
| 2. Conditions for P to be periodic | Peaks approach does not ensure periodicity |
| Find a value of g that ensures periodicity | Full marks |
| How does the value vary as other parameters are changed? | Full marks |
| 3. Perturb the periodic model with 20% random variations in Z and discuss | |
| Full marks. Note that in some cases P can show a long-term secular increase. | |

Schrage: A

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|---|---|
| 1. Verification of Riley's result (Fig. 21) | Full marks |
| Sensitivity for p, R0, r, g, 1-N, $\pm 20\%$ | Full marks |
| Relative sensitivity of various parameters | Full marks |
| Comparison to Riley's 27% error | Have you tried interpolating your model solution into the same time grid as the observations prior to computing the error? |
| 2. Conditions for P to be periodic | Full marks |
| Find a value of g that ensures periodicity | Full marks |
| How does the value vary as other parameters are changed? | Full marks |
| 3. Perturb the periodic model with 20% random variations in Z and discuss | |
| Full marks. Note that in some cases P can show a long-term secular increase. | |

Weinstock: A

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|--|---|
| 1. Verification of Riley's result (Fig. 21) | Full marks |
| Sensitivity for p , R_0 , r , g , $1-N$, $\pm 20\%$ | Full marks |
| Relative sensitivity of various parameters | Full marks |
| Comparison to Riley's 27% error | Have you tried interpolating your model solution into the same time grid as the observations prior to computing the error? |
| | |
| 2. Conditions for P to be periodic | Did not answer |
| Find a value of g that ensures periodicity | Full marks |
| How does the value vary as other parameters are changed? | Full marks |
| | |
| 3. Perturb the periodic model with 20% random variations in Z and discuss | |
| Full marks. Note that in some cases P can show a long-term secular increase. | |

Template

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|---|-------------------|
| 1. Verification of Riley's result (Fig. 21) | Full marks |
| Sensitivity for p , R_0 , r , g , $1-N$, $\pm 20\%$ | Full marks |
| Relative sensitivity of various parameters | Full marks |
| Comparison to Riley's 27% error | Full marks |
| | |
| 2. Conditions for P to be periodic | Full marks |
| Find a value of g that ensures periodicity | Full marks |
| How does the value vary as other parameters are changed? | Full marks |
| | |
| 3. Perturb the periodic model with 20% random variations in Z and discuss | |