

Homework 1: Rational Paranoia

This homework is due **Wednesday, January 16 at 6 p.m.** and counts for 5% of your course grade. Late submissions will be penalized by 10% plus an additional 10% every 4 hours until received. Late work will not be accepted after 15.5 hours past the deadline. If you have a conflict due to travel, interviews, etc., please plan accordingly and turn in your homework early.

When submitting your PDF to Gradescope, be sure to select the correct pages for each question. Failing to do so will result in a 5% deduction from each question incorrectly selected.

We encourage you to discuss the problems and your general approach with other students in the class. However, the answers you turn in must be your own original work, and you are bound by the Honor Code. Solutions must be submitted electronically via **Gradescope** in **PDF format** by completing the template on page 3 below.

For each scenario below, imagine that you are in charge of security. Apply the security mindset to answer these questions:

What assets are important for you to protect?

What security threats will you choose to defend against?

*What countermeasures can you justify, in terms of costs **and** benefits?*

Answer each of the above in the form of a bulleted list, with brief justifications or explanations as necessary. Your explanations for each part should be approximately a paragraph in length. The overall response should be no less than three pages and no more than 6 pages. State any critical assumptions you decide to make. Your grade will be based on the thoroughness, realism, and thoughtfulness of your analysis.

1–2. Pick **two** of the following scenarios.

(If you submit responses for more than two, you'll receive the two lowest scores.)

- (a) As head of the TSA, you set the rules for screening passengers at airport checkpoints.
- (b) You manage a bug tracker for the developers of a popular web browser; some bug reports are about sensitive security issues.
- (c) You are grading homework submissions for a class of 360+ students.
- (d) As director of the NSA, you set procedures for hiring new employees.
- (e) You manage the email server for a major presidential campaign.

3. Choose another scenario from everyday life that we haven't discussed in class.

Your choice may be directly related to computer security, but it doesn't have to be.

Submission Template

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Problem 1

Scenario:

{TSA|Bugs|Grading|NSA|Email}

Assumptions:

explain_your_assumptions

Assets:

- *Asset - concise_explanation*
- *Asset - concise_explanation*
- ...

Threats:

- *Threat - concise_explanation*
- *Threat - concise_explanation*
- ...

Countermeasures:

- *Countermeasure - concise_explanation*
- *Countermeasure - concise_explanation*
- ...

Problem 2

(Use the same format as Problem 1 for a different scenario from the list.)

Problem 3

Original Scenario:

explain_your_scenario_and_assumptions

Assets:

...

Threats:

...

Countermeasures:

...