Directions:

Please read these instructions carefully; we will deduct points if you do not comply with them exactly:

1. Write your full name, Yale NetID number, and check your TF’s name at the top of this page.
2. This exam consists of SIX (6) questions. Each question is on a separate page. You need to answer FIVE of the six questions. **You should answer only FIVE questions.** If you answer all six, we will grade and count only #1-5, and you will have made bad use of your time. The last page is scrap paper that will not be graded (you may rip it off to use it, but leave the rest of the exam stapled together). Mark which questions you answer on the chart below.
3. **On every page except the scrap paper, write your Yale NetID and name at the top.**
4. Leave blank the page with the question you are not answering. If you start writing on it, put a large X through the page. **It must be clear to the graders which question you are choosing not to answer.**
5. A good answer will refer to readings or lectures where relevant (you can mention a name or the title or just the article’s topic – we do not expect precise citations). Your answer should be as organized, clear, and concise as possible. **Remember we are NOT expecting a full essay; two paragraphs should be sufficient for each question.** You are not required (or even encouraged) to use all the space provided to answer a question. It is fine to be brief, as long as you answer all parts of the question. **Make sure to write legibly.**
6. When finished, please enter check marks in the **FIVE** questions you have answered below:

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<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
</table>
Example: | | | | | | ✓ |
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7. Please raise your hand to speak with a TF if you have any questions.

**Good luck!**
(a) Briefly define the terms “human capital” and “social capital” and give one example of each type of capital.

(b) Briefly explain how capital in general is created.

(c) Given the way “social capital” was described in the reading by Coleman (Coleman, J. “Social Capital in the Creation of Human Capital” American Journal of Sociology 1988; 94: S95-S120) and in lecture, can one think of social capital as a property of individuals? Why or why not?

(d) Briefly describe whether social capital is used solely for good purposes, or whether it can be used for both good and bad purposes.
A researcher identifies 10 videos that have the prospect of going viral. The researcher picks a random sample of 100 Yale students and asks them to each nominate a friend of theirs, forming a further sample of 100 friends of the original 100 random students. Then, the researcher surveys both groups – the random group and the friend group – and asks the respondents how many of the ten potentially viral videos they have seen.

(a) In which group -- (1) the random respondents, or (2) the friends of the random respondents -- would you expect a higher percentage of the 10 viral videos to be recognized?

(b) What social network phenomenon explains this?

(c) Imagine that you are considering the cumulative diffusion of a single viral video, as plotted on the curves below. Label the two curves as to which one is the random sample, and which one is the friend sample.

(d) Does a similar phenomenon occur with influenza? Would it occur with malaria? Why or why not?

Percentage affected

Time

Use the back of this page if you need more space, and put an arrow here:
Question #3


b) Name two “actual causes of death” according to this approach. Also explain why each such cause fits the concept of “actual causes.”
The following quote is taken from a recent New York Times article (March 30, 2015):

“A study from researchers at the University of Wisconsin Population Health Institute examined a series of risk factors that help explain the health (or sickness) of counties in the United States. In addition to the suspects you might expect — a high smoking rate, a lot of violent crime — the researchers found that people in unequal communities were more likely to die before the age of 75 than people in more equal communities, even if the average incomes were the same.”

List and describe the three classes of explanations we studied in class that might explain why a region with greater income inequality might have a lower life expectancy than another region, even if the average incomes in the two regions is the same. That is, by what three potential mechanisms is income inequality at the population level postulated to affect (or be associated with) poor health at the individual level?
The data below (taken from Miller M, Azrael D, Hemenway D., “Firearms and Suicide in the Northeast,” *Journal of Trauma* 2004; 57:626-632, and shown in lecture) describe rates of household firearm ownership and also rates of suicide, firearm suicide, and non-firearm suicide across seven Northeast states in the period 1996-2000.

(a) What do the data show in this state-level ecological analysis? What is the main finding?

(b) Discuss this finding with reference to the ideas of “structure” and “agency” we have been discussing in the course.

(c) Briefly state one policy intervention you might advocate for, given the foregoing.

<table>
<thead>
<tr>
<th>Percent of Households with Firearms</th>
<th>Suicides per 100000</th>
<th>Firearm Suicides per 100000</th>
<th>Non-Firearm Suicides per 100000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vermont</td>
<td>42%</td>
<td>12.3</td>
<td>8.0</td>
</tr>
<tr>
<td>Maine</td>
<td>41%</td>
<td>13.3</td>
<td>7.8</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>30%</td>
<td>11.7</td>
<td>6.2</td>
</tr>
<tr>
<td>Connecticut</td>
<td>17%</td>
<td>8.5</td>
<td>3.3</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>13%</td>
<td>8.3</td>
<td>3.0</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>12%</td>
<td>7.5</td>
<td>2.1</td>
</tr>
<tr>
<td>New Jersey</td>
<td>12%</td>
<td>7.1</td>
<td>2.3</td>
</tr>
<tr>
<td>All 7 States</td>
<td>17%</td>
<td>8.2</td>
<td>3.1</td>
</tr>
</tbody>
</table>

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For graders' use only:
In the Whitehall study, a relationship was found between social standing and cardiovascular health among British civil servants.

(a) What is the “ladder” instrument that Marmot describes in _The Status Syndrome_ (and that we reviewed in lecture), and what attribute is it used to measure?

(b) What was Marmot’s main finding with respect to coronary heart disease among the British civil servants included in the study?

(c) What is one possible explanation for this finding?
Scrap Paper

**NOTHING ON THIS PAGE WILL BE GRADED**