Rebecca West
Quantitative Reasoning assessment

Percent of adults diagnosed with Alzheimer's disease by age

1. Which of the following correlations would be the most likely to fit the data shown in the above chart?
   a. r= -.5
   b. r=0
   c. r=.4
   d. r=1

2. Which is the best interpretation of the graph below?
   a. Age causes Alzheimer's disease
   b. As age increases, the percent of adults diagnosed with Alzheimer's disease also increases
   c. An adult of age 68 cannot be diagnosed with Alzheimer's disease
   d. An individual of age 95 has a 75% chance of being diagnosed with Alzheimer's disease

3. Some studies suggest that there is a moderate negative correlation between daily physical exercise and Alzheimer's disease. Based on this information, briefly (two to three sentences) describe what you would expect to happen to your change of being diagnosed with Alzheimer's disease in later life if you take part in daily exercise as you age, and speculate as to why this relationship might exist. Be sure to also address the strength and direction of the correlation, and discuss a possible causal and a possible non- causal reason (third variable) the variables are correlated.

4. How comfortable do you now feel in reading and understanding correlations?
   a. very comfortable
   b. somewhat comfortable
   c. neither comfortable nor uncomfortable
   d. somewhat uncomfortable
   e. not at all comfortable

5. How comfortable do you now feel in reading and understanding scatterplots?
   a. very comfortable
   b. somewhat comfortable
   c. neither comfortable nor uncomfortable
   d. somewhat uncomfortable
   e. not at all comfortable

6. How comfortable do you now feel in making decisions about your health based on correlations and scatterplots you might see in the news, research articles, or television?
   a. very comfortable

b. somewhat comfortable

c. neither comfortable nor uncomfortable

d. somewhat uncomfortable

e. not at all comfortable

Full points (4)	3 points	2 points	1 point	0 points
-Explain that they might see a reduction in their risk of AD if they exercise - Mention that the correlation is negative, so exercise may mean a lower chance of AD - Mention that the correlation is moderate, address that this means exercise will not eliminate the risk but may provide marked reduction in risk - List at least one causal relationship - List at least one non-causal (e.g. daily exercisers are more likely to eat better)	- Addresses all but one of the required points or does not fully address each of the required points	- Addresses all but two of the required points - Provides incomplete / weak descriptions of how the variables are correlated	- Incorrectly identifies the meaning of a negative correlation But - Gives appropriate speculations about the relationship between the variables Or - Only addresses 2-3 of the required points	- Incorrectly identifies the meaning of a negative correlation And - Does not speculate about relationships or gives completely incorrect speculations