Chapter 17

1. Varimax rotation should be used when:

   a. You believe that the underlying factors will be correlated.

   b. You believe that the underlying factors are non-orthogonal.

   c. You believe that the underlying factors are independent.*

   d. Kaiser's criterion is met.

2. Oblique rotation should be used when:

   a. You believe that the underlying factors will be correlated.*

   b. You believe that the underlying factors are orthogonal.

   c. You believe that the underlying factors are independent.

   d. Kaiser's criterion is met.

3. Kaiser's criterion for retaining factors is:

   a. Retain any factor with an eigenvalue greater than 0.7.

   b. Retain any factor with an eigenvalue greater than 1.*

   c. Retain factors before the point of inflexion on a scree plot.

   d. Retain factors with communalities greater than .7.

4. What does the following output from a factor analysis tell us?

Bartlett's Test
```
R was not square, finding R from data
$chisq
[1] 402.652

$p.value
[1] 0

$df
[1] 153
```

KMO
```
$overall
[1] 0.702
```

   a. The sample size is sufficient, but there is multicollinearity in the data.

   b. The sample size is inadequate, and there is multicollinearity in the data.

   c. The sample size is adequate, and the correlations in the correlation matrix are significantly greater than zero.*

   d. The sample size is adequate, but the correlations in the correlation matrix are not large enough.

5. Marvin Zuckerman's work on dimensions of sensation seeking reveals four dimensions to this trait: (1) thrill and adventure seeking (e.g. engaging in risky sports and activities); (2) experience seeking (e.g. travelling to exotic locations, experimenting with drugs, listening to exciting music); (3) disinhibition (e.g. going to wild parties, engaging in sexual activity with strangers); and (4) susceptibility to boredom (e.g. being easily bored by predictable experiences and people). These dimensions are *theoretically independent*. A researcher was interested in designing a new questionnaire to measure sensation seeking. A 16-item questionnaire using a 5-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neither, 4 = agree, 5 = strongly agree) was devised and given to 750 people. The questionnaire is shown below. The next three questions relate to this example.

SD = Strongly Disagree, D = Disagree, N = Neither, A = Agree, SA = Strongly Agree	SD	D	N	A	SA
1 I drive too fast	☐	☐	☐	☐	☐
2 Pink Floyd are the greatest band ever ... man!	☐	☐	☐	☐	☐
3 I find people predictable	☐	☐	☐	☐	☐
4 I get off my nut on drugs all of the time	☐	☐	☐	☐	☐
5 People bore me (especially lecturers)	☐	☐	☐	☐	☐
6 I don't like to stray too far from home	☐	☐	☐	☐	☐
7 I never dance naked on tables at parties	☐	☐	☐	☐	☐
8 I hate the idea of bungee jumping	☐	☐	☐	☐	☐
9 I love to go to parties and drink until I'm lying in a puddle of my own sick	☐	☐	☐	☐	☐
10 I constantly get arrested for showing my backside in public	☐	☐	☐	☐	☐
11 This exam bores me so much I might just have to walk out	☐	☐	☐	☐	☐

12 I would like to jump off a cliff	☐	☐	☐	☐	☐
13 I enjoy travelling	☐	☐	☐	☐	☐
14 Life is a mundane slog of tedium to me	☐	☐	☐	☐	☐
15 If I see a stranger I want to have sex with them	☐	☐	☐	☐	☐
16 I would love to do a parachute jump	☐	☐	☐	☐	☐

Based on the **R** output below, which relates to the analysis of the sensation-seeking questionnaire, what could you conclude?

Bartlett's Test
```
R was not square, finding R from data
$chisq
[1] 6467.251

$p.value
[1] 0

$df
[1] 120
```
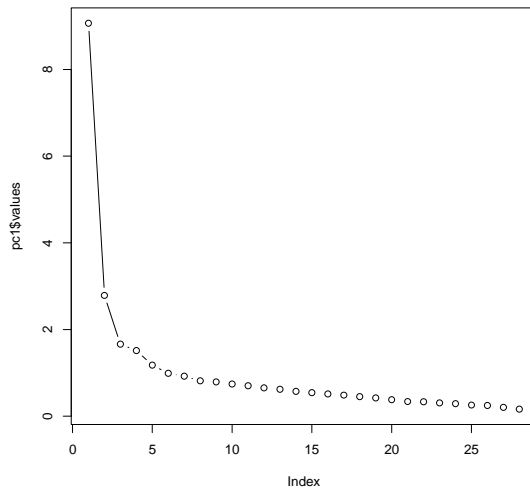
KMO
```
$overall
[1] .681
```

    a. The analysis has not been conducted on an adequately sized sample.

    b. It's unclear whether the sample size is adequate, but there is multicollinearity in the data.

    c. The analysis has been conducted on an adequately sized sample.*

    d. There is singularity in the data.

6. Based on the scree plot below, how many factors should be extracted?

a. 2

b. 3

c. 4

d. 3 or 5*