4. In a time-series forecasting problem, if the seasonal indices for quarters 1, 2, and 3 are .80, .90, and .95 respectively, what can you say about the seasonal index for quarter 4?
A) It will be less than 1.
B) It will be greater than 1.
C) It will be equal to 1.
D) Seasonality does not exist.
E) There is insufficient data to say anything.

5. If actual sales are 120 units and the seasonal index is 1.2, then the deseasonalized sales are (Note that this question is not related to the previous test question):
A) 100.0
B) 118.8
C) 121.2
D) 132.9
E) 144.0

6. Which of the following statements is true?
A) BIAS tells you the magnitude of error, while MAD tells you the direction.
B) BIAS and MAD are always equal.
C) MAD can never be negative.
D) MAD can never be greater than the Bias.
E) MAD is always less than the Bias

7. The simple moving average is well suited to forecasting demand that is stable with no trend or seasonal pattern.
A) True
B) False

9. One advantage of the moving average is that it reacts quickly to trends and seasonal effects.
A) True
B) False

11. If there is no seasonal variation in quarterly data, the seasonal factors of the seasonally adjusted forecast will all be equal to 0.25.
A) True
B) False

12. A negative correlation coefficient indicates a weaker relationship between X and Y than a positive correlation coefficient.
A) True
B) False
**Directions for Problems 13-17:** Sam Piper is trying to forecast sales for his store, Sam’s Sporting Supermart. Sam’s first try was with Simple Exponential Smoothing, using $\alpha = 0.75$. Unfortunately, his dog chewed his worksheet. Please help him by filling in the missing cells (see cells with question marks) with correct values, or correct Excel formulas.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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<td>Enrollment</td>
<td>Forecast</td>
<td>Error</td>
<td>Abs Error</td>
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<td></td>
<td></td>
<td></td>
<td>MAD =</td>
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</table>

   A) \(=(C6*B16)+(D6*B16)\)
   B) \(=(C6*B16)+(D6*(1-B16))\)
   C) \(=(C7*B16)+(D6*(1-C16))\)
   D) \(=(C7*B16)-(D6*(1-C16))\)
   E) \(=(C7*C16)+(E6*C16)\)

14. Find the Error for 1997 Q2 (cell E3).
   A) 0
   B) 6
   C) -6
   D) 28
   E) -28

15. Find the Absolute Error for 1998 Q4 (cell F9).
   A) -36
   B) 0
   C) 20
   D) 28
   E) 36

16. Find the Bias (cell E15).
   A) \(=\text{AVERAGE(E2:E13)}\)
   B) \(=\text{AVERAGE(E3:E14)}\)
   C) \(=\text{AVERAGE(E3:E13)}\)
   D) \(=\text{SUM(E2:E13)}\)
E) \[=\text{SUM(E3:E14)}\]

17. If Sam had used a Naïve forecast, what would his forecast for Q1, 2000 have been?
   A) 391
   B) 403
   C) 410
   D) 415
   E) 423

20. The Delphi method attempts to arrive at a consensus opinion from a group of experts.
   A) True
   B) False

32. Exponential Smoothing with $\alpha = 0.125$ and a Simple Moving Average with $n = 8$ put the same weight on the actual value of $y$ in the current period.
   A) True
   B) False