Sample Questions

The following sample questions are not inclusive and do not necessarily represent all of the types of questions that comprise the exams. The questions are not designed to assess an individual's readiness to take a certification exam.

SAS ® Viya ® 3.5 Forecasting and Optimization Exam

Question 1:

Which is an example of time series forecasting?

A. A dried fruit company sends out marketing postcards and models who will respond.
B. A glue manufacturer wants to know how long it will take for its glue to dry.
C. A fire department wants to know how many fires it will likely need to fight during the holidays, so that it can staff accordingly.
D. A hospital wants to know how long its patients will survive after open heart surgery so that adverse effects can be caught early.

Answer: C

Question 2:

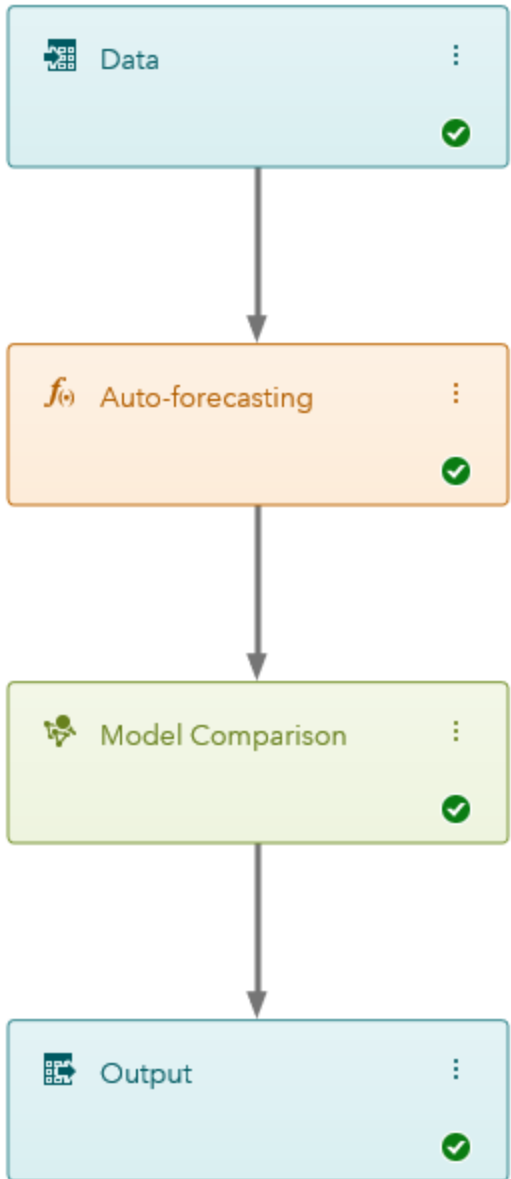Which branches can result from an application of branch-and-bound to the problem given?

maximize $\quad$ $6x + 5y$

subject to $\quad$ $2x + 3y \leq 7$

$\quad\quad\quad\quad$ $2x - y \leq 2$

$\quad\quad\quad\quad$ $x \geq 0, y \geq 0$

$\quad\quad\quad\quad$ y integer

A. $y \leq 0.5, y \geq 1.5$
B. $x \leq 1, x \geq 2$
C. $x \geq 3, x \geq 4$
D. $y \leq 1, y \geq 2$

Answer: D

Question 3:

Refer to the exhibit:

Which node can be saved and shared via the Exchange?

- A. Data
- B. Auto-forecasting
- C. Model Comparison
- D. Output

Answer: B

Question 4:

Which situation will result in an override conflict in SAS Visual Forecasting?

- A. Two or more overrides cannot be reconciled for the same time period.
- B. An override affects a combined model forecast.
- C. An override is applied to an aggregated forecast, and one or more components of the aggregated forecast come from models having events or independent variables.

D.   Two or more overrides exceed 100% APE.

Answer: A

Question 5:

Attribute variables are primarily useful to do what in a Model Studio Forecasting project?

    A. Visualize the data and operate on generated forecasts outside the hierarchy defined by the project's BY variables.

    B. Define the project's data hierarchy and visualize the level data contained in the attribute variable.

    C. Visualize the project's data hierarchy and operate on generated forecasts inside the hierarchy.

    D. Augment the project's BY variables to define the data hierarchy for modeling and overrides.

Answer: A

Question 6:

Given the diagram below:
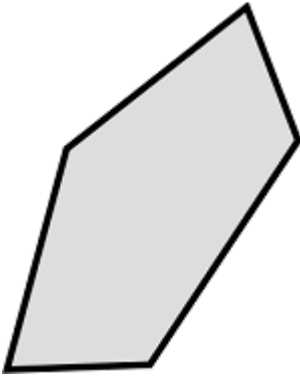
Which statement describes the shape shown?

    A. It is a convex set, because any point on a line drawn between two points in the set is also contained in the set.
    B. It is **NOT** a convex set, because it is not smooth and differentiable at all coordinates that define it.
    C. It is a convex set, because it is a polygon consisting of a number of sides less than the number in its compliment.
    D. It is **NOT** a convex set, because it is composed of linear segments whose second derivatives do not exist.

Answer: A

Question 7:

What is a difference between a cyclical component and seasonal component of a time series?

    A. A cyclical, but not a seasonal component, shows patterns that are not of a fixed period
    B. A cyclical, but not a seasonal component, has a sinusoidal pattern over time.
    C. A seasonal, but not a cyclical component, has a sinusoidal pattern over time.
    D. A seasonal, but not a cyclical, component, shows patterns that occur over a year.

Answer: A

Question 8:

Which statement is TRUE regarding default functionality in combined model forecasts?

    A. The combined model forecast is an average across forecasts from individual models generated in the project.
    B. The combined model forecast is an average across forecasts from individual models generated in a node.
    C. The combined model forecast is an average across forecasts from individual models generated in the pipeline.
    D. The combined model forecast is an average across forecasts from individual models generated in an individual branch of the pipeline.

Answer: B

Question 9:

Weighted performance measures like WAPE (weighted absolute percent error) are primarily useful for which task in a Model Studio forecasting project?

A. summarizing model performance for selecting a Champion pipeline for the project
B. correcting the bias found in unweighted performance measures in the process of selecting a champion pipeline for the project
C. selecting the champion model for an individual series in a pipeline for a project
D. choosing which series require overrides prior to choosing the champion pipeline for the project

Answer: A

Question 10:

Which sampling method is preferred for forecasting holdout assessment?

A. Draw simple random sample without replacement of about 25% of the series.
B. Draw simple random sample with replacement of about 50% of the series.
C. Sample first observations in the series, with at least four observations in the holdout data.
D. Sample last observations in the holdout data, with at least 4 observations in the fit data.

Answer: D

Question 11:

You are selling movie tickets at 20 different theatre locations in five cities. The variable you are forecasting is number of tickets sold per week. Some theatres are open 7 days a week, and others are only open 5 days a week.

Which is the best data creation option to generate forecasts at the city level?
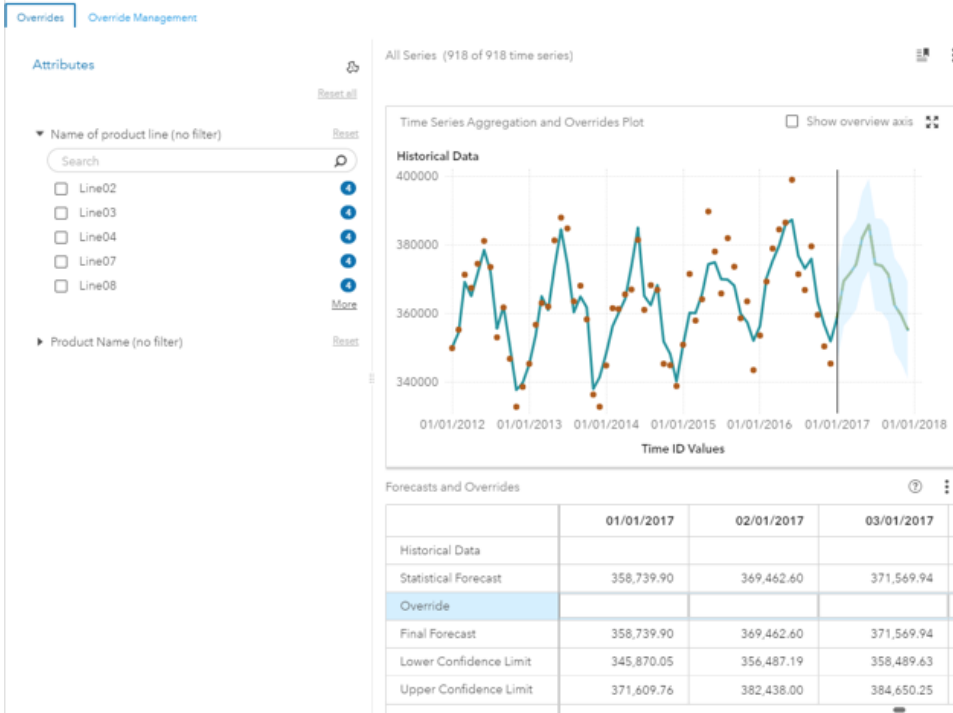
A. Total (sum) Accumulation
B. Average Accumulation
C. Total (sum) Aggregation
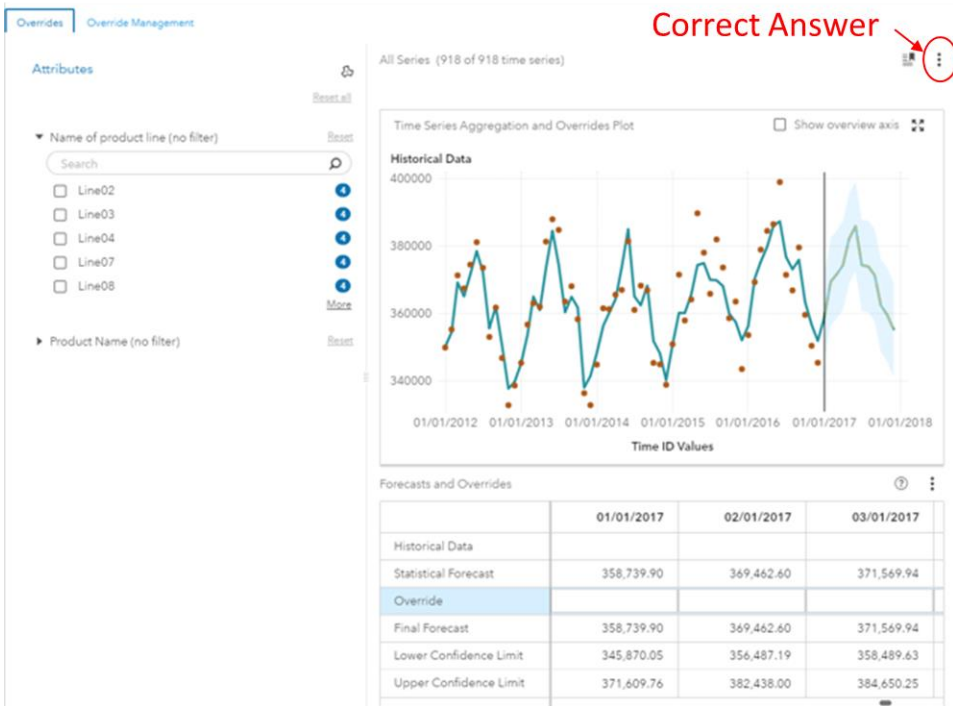D. Average Aggregation

Question 12:

Refer to the exhibit:

Click on the area that will export the forecasts to a data table.

*(**Note: This is an example of an interactive item, on the exam itself you will be able to click anywhere on the image to indicate your answer.)*

Attributes

Reset all

▼ Name of product line (no filter)   Reset

Search

☐ Line02
☐ Line03
☐ Line04
☐ Line07
☐ Line08

More

▶ Product Name (no filter)   Reset

All Series (918 of 918 time series)

Time Series Aggregation and Overrides Plot   ☐ Show overview axis

Historical Data

Forecasts and Overrides

	01/01/2017	02/01/2017	03/01/2017
Historical Data			
Statistical Forecast	358,739.90	369,462.60	371,569.94
Override			
Final Forecast	358,739.90	369,462.60	371,569.94
Lower Confidence Limit	345,870.05	356,487.19	358,489.63
Upper Confidence Limit	371,609.76	382,438.00	384,650.25

Answer:

Overrides   Override Management

Correct Answer

Attributes

Reset all

▼ Name of product line (no filter)   Reset

Search

☐ Line02
☐ Line03
☐ Line04
☐ Line07
☐ Line08

More

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Override			
Final Forecast	358,739.90	369,462.60	371,569.94
Lower Confidence Limit	345,870.05	356,487.19	358,489.63
Upper Confidence Limit	371,609.76	382,438.00	384,650.25

Question 13:

Given the following code *(some parts are blocked out intentionally)*.

```
proc optmodel;
var L>=0, C>=0;

con Con1: 2*L + 3*C <=40;
con Con2: 4*L + 2*C <=25;
```

```
con Con3: 2*L = 1*C;

   Z = 12*L + 8*C;

solve with LP;
print L C Z;
quit;
```

For a unique, optimal solution to exist that isn't [0,0], which statement must be true regarding the objective function?

    A. It is a minimization problem and the constraints create upper bounds.
    B. It is a maximization problem and the constraints create lower bounds.
    C. It is a minimization problem and the constraints create lower bounds.
    D. It is a maximization problem and the constraints create upper bounds.

Answer: D

Question 14:

Which time series models can accommodate input variable effects? *(Choose two.)*

    A. ARIMA
    B. ARIMAX
    C. Exponential Smoothing
    D. ARMA
    E. Unobserved Components

Answer: B,E

Question 15:

Refer to the exhibit:

group	dept	date	value
A	COMP	JAN1994	1313
A	COMP	FEB1994	1005
A	COMP	MAR1994	1020
A	COMP	APR1994	945
A	COMP	MAY1994	975
A	COMP	JUN1994	910
A	COMP	JUL1994	950
A	COMP	AUG1994	875
A	COMP	SEP1994	.
A	COMP	OCT1994	920

Which best describes the data shown?

    A. Monthly interval time series
    B. Monthly transactional data
    C. Monthly time stamped observations
    D. Bi-monthly hierarchy with missingness

Answer: A