1. Given the SAS data set WORK.TRANSACT:

Rep	Cost	Ship
SMITH	200	50
SMITH	400	20
JONES	100	10
SMITH	600	100
JONES	100	5

The following output is desired:

Rep	
JONES	105
JONES	105
SMITH	105
SMITH	105
SMITH	105

Which of the following SQL statements was most likely used to generate this result?

A.
```
Select
rep,
min(Cost,Ship)
from WORK.TRANSACT
group by Rep
order by Rep ;
```

B.
```
select
rep,
min(Cost,Ship) as Min
from WORK.TRANSACT
summary by Rep
order by Rep ;
```

C.
```
select
rep,
 min(Cost+Ship)
from WORK.TRANSACT
order by Rep;
```

D.
```
Select
rep,
min(Cost+Ship)
from WORK.TRANSACT
group by Rep
order by Rep ;
```

2. Given the SAS data set WORK.ONE:

Rep	Cost
SMITH	20

SMITH 40
JONES 10
SMITH 60
JONES 10
The following SAS program is submitted;
proc sql;
select
Rep, sum(Cost) from WORK.ONE
group by Rep
order by Rep ;
quit;
Which result set would be generated?

A. JONES 20
JONES 20
SMITH 120
SMITH 120
SMITH 120

B. JONES 20
SMITH 120

C. JONES 280
SMITH 280

D. JONES 140
JONES140
SMITH 140
SMITH 140
SMITH 140

3. Given the SAS data set WORK.ONE:

Rep	Cost
SMITH	20
SMITH	40
JONES	10
SMITH	60
JONES	10

The following output is desired:

Rep	
JONES	20
JONES	20
SMITH	120
SMITH	120
SMITH	120

Which of the following SQL statements was most likely used to generate this result?
A. proc sql;
select
rep, sum(Cost) from WORK.ONE

```
    group by Rep
    order by Rep ;
    quit;
```

B.
```
proc sql;
    select
    rep, (select sum(Cost) from one
   group by rep)
   from one
   order by Rep;
   quit;
```

C.
```
proc sql;
    select
    rep, (select sum(Cost) from one as a
    where a.rep=b.rep)
   from one as b
   order by Rep;
   quit;
```

D
```
proc sql;
   select
   rep, (select sum(Cost) from one as a
   where a.rep=b.rep)
   from one as b
   summary by Rep
   order by Rep;
    quit;
```

4. Given the SAS data sets:

WORK.MATH1A

Name	Fi
Lauren	L
Patel	A
Chang	Z
Hillier	R

WORK.MATH1B

Name	Fi
Smith	M
Lauren	L
Patel	A

The following SAS program is submitted:

```
proc sql;
select * from WORK.MATH1A
[_insert_set_operator_]
select * from WORK.MATH1B ;
quit;
```

The following output is desired:

Name	Fi
Lauren	L
Patel	A
Chang	Z
Hillier	R
Smith	M
Lauren	L
Patel	A

Which SQL set operator completes the program and generates the desired output?

A.append corr
B. union corr
C. outer union corr
D. intersect corr

5. Given the SAS data sets:

WORK.MATH1A

Name	Fi
Lauren	L
Patel	A
Chang	Z
Hillier	R

WORK.MATH1B

Name	Fi
Smith	M
Lauren	L
Patel	A

The following SAS program is submitted:

```
proc sql;
select * from WORK.MATH1A
[_insert_set_operator_]
select * from WORK.MATH1B ;
quit;
```

The following output is desired:

Name	Fi
Chang	Z
Hillier	R

Which SQL set operator completes the program and generates the desired output?
A.except corr
B. union corr
C. outer union corr
D. intersect corr

6. Given the SAS data sets:

WORK.MATH1A

Name	Fi
Lauren	L
Patel	A
Chang	Z
Hillier	R

WORK.MATH1B

Name	Fi
Smith	M
Lauren	L
Patel	A

The following SAS program is submitted:

```
proc sql;
select * from WORK.MATH1A
[_insert_set_operator_]
select * from WORK.MATH1B ;
quit;
```

The following output is desired:

```
Name   Fi
-------  ---
Lauren  L
Patel    A
```

Which SQL set operator completes the program and generates the desired output?
A.except corr
B. union corr
C. outer union corr
D. intersect corr

7. Given the SAS data sets:

```
WORK.CLASS1 WORK.CLASS2
Name  Course          Name   Class
 ------  -----------        -------      -------
Lauren MATH1         Smith    MATH2
Patel    MATH1         Farmer  MATH2
Chang  MATH1         Patel    MATH2
Chang  MATH3         Hillier   MATH2
```

The following SAS program is submitted:

```
proc sql;
select Name
from WORK.CLASS1
except all
select Name from WORK.CLASS2 ;
quit;
```

Which result set would be generated?

A.
```
Name
---------
Chang
Lauren
```

B.
```
Name
---------
Chang
Chang
Lauren
```

C
```
Name
---------
Patel
```

D.
```
Name
---------
Smith
Farmer
Patel
Hillier
```

8. Given the SAS data set WORK.ONE:

```
   Rep Cost
    ----- ----
 SMITH 200
 SMITH 400
 JONES 100
 SMITH 600
JONES 100
```

The following SAS program is submitted:

```
proc sql;
 select
Rep, avg(Cost) as Average
from WORK.ONE
[either__insert_SQL_where_clause_]
group by Rep
[_or_ _insert_SQL_having_clause_] ;
quit;
```

The following output is desired:

```
Rep Average
----- ----------
JONES 100
```

Which SQL clause completes the program and generates the desired output?

A. where calculated Average > (select avg(Cost) from WORK.ONE)
B. having Average > (select avg(Cost) from WORK.ONE)
C. having avg(Cost) < (select avg(Cost) from WORK.ONE)
D. where avg(Cost) > (select avg(Cost) from WORK.ONE)

9.Given the SAS data sets:

```
WORK.ONE                WORK.TWO
Year Qtr  Budget      Year Qtr Sales
 ----  ------    ------         ---- ----- -------
2001  3      500         2001  4  300
2001  4     400          2002  1  600
2003  1     350
```

The following SAS program is submitted:

```
proc sql;
select
TWO.*, budget
 from
WORK.ONE
[_insert_join_operator_]
WORK.TWO
on ONE.Year=TWO.Year ;
quit;
```

The following output is desired:

```
Year Qtr  Sales Budget
------------------------------
2001  4    300      500
2001  4    300      400
     .    .        .      350
```

Which join operator completes the program and generates the desired output?
A. left join
B. right join
C. full join
D. outer join

10. Given the SAS data sets:

Work.One
year sales
----- -------
2001 800
2001 500
2003 700

Work.Two
year profit
------ -------
2001 100
2002 200

The following SAS program is submitted:

```
proc sql;
select sum(profit)
from work.one
right join
work.two
on one.year=two.year;
quit;
```

Which result set would be generated?
A. 100
B. 300
C. 400
D. 500

11. How many columns can an SQL procedure subquery within a WHERE or HAVING clause return to the outer query?
A. 0
B. 1
C. 2
D. the same number of columns that are in the table

12. Which one of the following SAS programs removes the index **Jobcode** from the table **Staff**?

A.
```
proc sql;
  drop index jobcode from work.staff;
  quit;
```

B.
```
proc sql;
  delete index jobcode from work.staff;
  quit;
```

C.
```
proc sql;
  drop index from work.staff;
  quit;
```

D. proc sql;
delete index from work.staff;
quit;

13. Given the following SAS program:
proc Sql;
Select product, type, Sum(sales) as revenue
from one
group by product, type;
quit;

Which one of the following clauses should be added to the program to sort the output by PRODUCT and decreasing REVENUE?

A. order by 1, 3
B. order by 1, 3 desc
C. orderby product, revenue desc
D. order by product, desc revenue

14. Given the following SAS data set ONE:
ONE

NUM	VAR
1	A
2	B
3	C

Which one of the following SQL programs deletes the SAS data set ONE?

A.
proc sql;
delete table one;
quit;
B.
proc sql;
alter table one
drop num, var;
quit;
C.
proc sql;
drop table one;
quit;
D.
proc sql;
delete from one;
quit;

15. Given the SAS data sets ONE and TWO:

ONE

YEAR	QTR	BUDGET
2001	3	500
2001	4	400
2002	1	700

TWO

YEAR	QTR	SALES
2001	4	300
2002	1	600

The following SAS program is submitted:

```
proc sql;
select one.*, sales from one, two;
quit;
```

Which report is generated?

A.

YEAR	QTR	BUDGET	SALES
2001	3	500	300
2001	4	400	.
2002	1	700	600

B.

YEAR	QTR	BUDGET	SALES
2001	3	500	.
2001	4	400	300
2002	1	700	600

C.

YEAR	QTR	BUDGET	SALES
2001	3	500	300
2001	4	400	300
2002	1	700	600

D.

YEAR	QTR	BUDGET	SALES
2001	3	500	300
2001	4	400	300
2002	1	700	300
2001	3	500	600
2001	4	400	600
2002	1	700	600

16. Which of the following is true about a noncorrelated subquery in SAS?
A. The outer query executes before the subquery.
B. The subquery executes once before the outer query.
C. The subquery creates a data set in the WORK library.
D. The subquery can reference tables in the FROM clause in the outer query.

17. The following SAS program is submitted:
proc sort data=class out=class1 nodupkey;
by name course ;
run;

Which SQL procedure program produces the same results?

A. proc sql;
create table class1 as
select distinct name, course
from class;
quit;

B. proc sql;
create table class1 as
select nodup name, course
from class;
quit;

C. proc sql;
create table class1 as
select exclusive name, course
from class; quit;

D. proc sql;
create table class1 as select name, course
from class order by distinct name;
quit;