

*Joins - Books*

Reminder: read the Project Guidelines document for instructions on how to format and submit your assignments. It may also be advisable for you to consider formatting your output in landscape orientation so that you can better accommodate the ‘wider’ result tables that are formed in these join problems. ***In this problem set, use the JOIN clause to form the equi-joins.*** It would also be a good idea to prepare a diagram (ER Model) of the books database before you begin these problems – it’s important to see how the writtenby table factors in to the model.

***Use the Oracle 9i server for questions 1 thru 8.***

1. List the book(id, title, and cost) and author(id, name) info for all books in the collection. [42 rows]

```
SELECT book.ID,book.TITLE,book.COST,author.ID,author.NAME
```

```
FROM book
```

```
JOIN writtenby
```

```
ON book.ID = writtenby.bookID
```

```
JOIN author
```

```
ON author.iD = writtenby.authorID
```

ID	TITLE	COST	ID	NAME
20011	The Dumas Club	23.95	10013	Arturo Perez-Reverte
20012	The Negotiator	19.95	10025	Frederick Forsyth
20013	Icon	26.95	10025	Frederick Forsyth
20014	The Fist of God	12.95	10025	Frederick Forsyth
20015	The Fourth Protocol	14.95	10025	Frederick Forsyth
20016	The Dogs of War	14.95	10025	Frederick Forsyth
20021	Inca Gold	24	10012	Clive Cussler
20022	Shock Wave	24	10012	Clive Cussler
20023	Sahara	24	10012	Clive Cussler
20024	The Memory of Earth	18.95	10011	Orson Scott Card
20025	The Cyberiad	12.95	10026	Stanislaw Lem
20026	Foundation	6.95	10019	Isaac Asimov
20027	Foundation and Empire	6.95	10019	Isaac Asimov
20028	Second Foundation	6.95	10019	Isaac Asimov
ID	TITLE	COST	ID	NAME
20031	Jurassic Park	19.95	10020	Michael Crichton
20032	Rising Sun	21.95	10020	Michael Crichton
20033	Disclosure	21.95	10020	Michael Crichton
20034	The Andromeda Strain	6.95	10020	Michael Crichton
20036	Airframe	6.95	10020	Michael Crichton
20035	Timeline	26.95	10020	Michael Crichton
20041	Masters of Deception	13.95	10015	Michelle Slatella
20041	Masters of Deception	13.95	10016	Joshua Quittner
20042	The Keys of This Blood	22.95	10022	Malachi Martin
20051	Softwar	10.95	10017	Thiery Breton
20051	Softwar	10.95	10018	Denis Beneich
20052	The Pentecost Project	11.95	10017	Thiery Breton
20055	The Society of Mind	16.95	10014	Eric L. Harry
20061	Talking God	24	10023	Tony Hillerman
ID	TITLE	COST	ID	NAME
20062	A Thief of Time	24	10023	Tony Hillerman
20063	Sacred Clowns	24	10023	Tony Hillerman
20064	The First Eagle	24	10023	Tony Hillerman
20065	Skinwalkers	24	10023	Tony Hillerman
20066	Listening Woman	24	10023	Tony Hillerman
20067	The Ghostway	24	10023	Tony Hillerman
20068	Dance Hall of the Dead	22	10023	Tony Hillerman
20069	The Blessing Way	22	10023	Tony Hillerman
20074	The Hunt for Red October	24	10021	Tom Clancy
20075	The Cardinal in the Kremlin	14	10021	Tom Clancy
20076	Clear and Present Danger	14	10021	Tom Clancy
20077	Executive Orders	21	10021	Tom Clancy
20078	Patriot Games	17.95	10021	Tom Clancy
20079	The Sum of All Fears	14.95	10021	Tom Clancy

42 rows selected.

2. List the book(id, title, and cost) and author(id, name) info for all books in the collection, that cost less than \$10. [5 rows]

```
SELECT book.ID,book.TITLE,book.COST,author.ID,author.NAME
FROM book
JOIN writtenby
ON book.ID = writtenby.bookID
JOIN author
ON author.iD = writtenby.authorID
AND book.COST < 10
```

ID	TITLE	COST	ID	NAME
20026	Foundation	6.95	10019	Isaac Asimov
20027	Foundation and Empire	6.95	10019	Isaac Asimov
20028	Second Foundation	6.95	10019	Isaac Asimov
20034	The Andromeda Strain	6.95	10020	Michael Crichton
20036	Airframe	6.95	10020	Michael Crichton

3. List the book(id, title, and cost) and author(id, name) info for all books in the collection, that cost more than the average book cost. [23 rows]

```
SELECT book.ID,book.TITLE,book.COST,author.ID,author.NAME
FROM book
JOIN writtenby
ON book.ID = writtenby.bookID
JOIN author
ON author.iD = writtenby.authorID
AND book.COST > ( SELECT AVG(COST) FROM book)
```

ID	TITLE	COST	ID	NAME
20011	The Dumas Club	23.95	10013	Arturo Perez-Reverte
20012	The Negotiator	19.95	10025	Frederick Forsyth
20013	Icon	26.95	10025	Frederick Forsyth
20021	Inca Gold	24	10012	Clive Cussler
20022	Shock Wave	24	10012	Clive Cussler
20023	Sahara	24	10012	Clive Cussler
20024	The Memory of Earth	18.95	10011	Orson Scott Card
20031	Jurassic Park	19.95	10020	Michael Crichton
20032	Rising Sun	21.95	10020	Michael Crichton
20033	Disclosure	21.95	10020	Michael Crichton
20035	Timeline	26.95	10020	Michael Crichton
20042	The Keys of This Blood	22.95	10022	Malachi Martin
20061	Talking God	24	10023	Tony Hillerman
20062	A Thief of Time	24	10023	Tony Hillerman
ID	TITLE	COST	ID	NAME
20063	Sacred Clowns	24	10023	Tony Hillerman
20064	The First Eagle	24	10023	Tony Hillerman
20065	Skinwalkers	24	10023	Tony Hillerman
20066	Listening Woman	24	10023	Tony Hillerman
20067	The Ghostway	24	10023	Tony Hillerman
20068	Dance Hall of the Dead	22	10023	Tony Hillerman
20069	The Blessing Way	22	10023	Tony Hillerman
20074	The Hunt for Red October	24	10021	Tom Clancy
20077	Executive Orders	21	10021	Tom Clancy

23 rows selected.

4. List the book(id, title, and cost) and author(id, name) info for all books in the collection, that cost between \$13 and the average book cost. [9 rows]

```
SELECT book.ID,book.TITLE,book.COST,author.ID,author.NAME
FROM book
JOIN writtenby
ON book.ID = writtenby.bookID
JOIN author
ON author.iD = writtenby.authorID
AND book.COST BETWEEN 13 AND ( SELECT AVG(COST) FROM book)
```

ID	TITLE	COST	ID	NAME
20015	The Fourth Protocol	14.95	10025	Frederick Forsyth
20016	The Dogs of War	14.95	10025	Frederick Forsyth
20041	Masters of Deception	13.95	10015	Michelle Slatella
20041	Masters of Deception	13.95	10016	Joshua Quittner
20055	The Society of Mind	16.95	10014	Eric L. Harry
20075	The Cardinal in the Kremlin	14	10021	Tom Clancy
20076	Clear and Present Danger	14	10021	Tom Clancy
20078	Patriot Games	17.95	10021	Tom Clancy
20079	The Sum of All Fears	14.95	10021	Tom Clancy

9 rows selected.

5. List the book(id, title, and cost) and author(id, name) info for all books in the collection, that don't reside at HOME. [4 rows]

```
SELECT book.ID,book.TITLE,book.COST,author.ID,author.NAME
FROM book
JOIN writtenby
ON book.ID = writtenby.bookID
JOIN author
ON author.iD = writtenby.authorID
AND book.LOCATION <> 'HOME'
```

ID	TITLE	COST	ID	NAME
20035	Timeline	26.95	10020	Michael Crichton
20074	The Hunt for Red October	24	10021	Tom Clancy
20075	The Cardinal in the Kremlin	14	10021	Tom Clancy
20078	Patriot Games	17.95	10021	Tom Clancy

6. List the book(id, title, and cost) and author(id, name) and publisher(id, name) info for all books in the collection. [42 rows]

```
SELECT book.ID,book.TITLE,book.COST,
author.ID,author.NAME,
publisher.ID, publisher.NAME
FROM book
JOIN writtenby
ON book.ID = writtenby.bookID
JOIN author
ON author.iD = writtenby.authorID
JOIN publisher
ON book.PUBLID = publisher.ID
```

ID	TITLE	COST	ID	NAME	ID	NAME
20011	The Dumas Club	23.95	10013	Arturo Perez-Reverte	60023	The Harvill Press
20012	The Negotiator	19.95	10025	Frederick Forsyth	60018	Bantam
20013	Icon	26.95	10025	Frederick Forsyth	60018	Bantam
20014	The Fist of God	12.95	10025	Frederick Forsyth	60018	Bantam
20015	The Fourth Protocol	14.95	10025	Frederick Forsyth	60018	Bantam
20016	The Dogs of War	14.95	10025	Frederick Forsyth	60018	Bantam
20021	Inca Gold	24	10012	Clive Cussler	60012	Simon and Schuster
20022	Shock Wave	24	10012	Clive Cussler	60012	Simon and Schuster
20023	Sahara	24	10012	Clive Cussler	60012	Simon and Schuster
20024	The Memory of Earth	18.95	10011	Orson Scott Card	60011	TOR
20025	The Cyberiad	12.95	10026	Stanislaw Lem	60019	Harcourt Brace Jovanovich
20026	Foundation	6.95	10019	Isaac Asimov	60014	Doubleday
20027	Foundation and Empire	6.95	10019	Isaac Asimov	60014	Doubleday
20028	Second Foundation	6.95	10019	Isaac Asimov	60014	Doubleday
ID	TITLE	COST	ID	NAME	ID	NAME
20031	Jurassic Park	19.95	10020	Michael Crichton	60015	Knopf
20032	Rising Sun	21.95	10020	Michael Crichton	60015	Knopf
20033	Disclosure	21.95	10020	Michael Crichton	60015	Knopf
20034	The Andromeda Strain	6.95	10020	Michael Crichton	60015	Knopf
20036	Airframe	6.95	10020	Michael Crichton	60015	Knopf
20035	Timeline	26.95	10020	Michael Crichton	60020	Random House
20041	Masters of Deception	13.95	10015	Michelle Slatella	60016	Harper Collins
20041	Masters of Deception	13.95	10016	Joshua Quittner	60016	Harper Collins
20042	The Keys of This Blood	22.95	10022	Malachi Martin	60012	Simon and Schuster
20051	Softwar	10.95	10017	Thiery Breton	60013	Holt, Rinehart and Winston
20051	Softwar	10.95	10018	Denis Beneich	60013	Holt, Rinehart and Winston
20052	The Pentecost Project	11.95	10017	Thiery Breton	60013	Holt, Rinehart and Winston
20055	The Society of Mind	16.95	10014	Eric L. Harry	60016	Harper Collins
20061	Talking God	24	10023	Tony Hillerman	60016	Harper Collins
ID	TITLE	COST	ID	NAME	ID	NAME
20062	A Thief of Time	24	10023	Tony Hillerman	60016	Harper Collins
20063	Sacred Clowns	24	10023	Tony Hillerman	60016	Harper Collins
20064	The First Eagle	24	10023	Tony Hillerman	60016	Harper Collins
20065	Skinwalkers	24	10023	Tony Hillerman	60016	Harper Collins
20066	Listening Woman	24	10023	Tony Hillerman	60016	Harper Collins
20067	The Ghostway	24	10023	Tony Hillerman	60016	Harper Collins
20068	Dance Hall of the Dead	22	10023	Tony Hillerman	60016	Harper Collins
20069	The Blessing Way	22	10023	Tony Hillerman	60016	Harper Collins
20074	The Hunt for Red October	24	10021	Tom Clancy	60017	Putnam
20075	The Cardinal in the Kremlin	14	10021	Tom Clancy	60017	Putnam
20076	Clear and Present Danger	14	10021	Tom Clancy	60017	Putnam
20077	Executive Orders	21	10021	Tom Clancy	60017	Putnam
20078	Patriot Games	17.95	10021	Tom Clancy	60017	Putnam
20079	The Sum of All Fears	14.95	10021	Tom Clancy	60017	Putnam

42 rows selected.

7. List the book(id, title, and cost) and author(id, name) and publisher(id, name) info for all books in the collection, written by an author whose last name starts with a letter in the first half of the alphabet (ie. A -> M). [39 rows]

```
SELECT book.ID,book.TITLE,book.COST,  
author.ID,author.NAME,  
publisher.ID, publisher.NAME  
FROM book  
JOIN writtenby  
ON book.ID = writtenby.bookID  
JOIN author  
ON author.iD = writtenby.authorID  
JOIN publisher  
ON book.PUBLID = publisher.ID  
AND author.LASTNAME >= 'A'  
AND author.LASTNAME < 'N'  
ORDER BY LASTNAME
```

ID	TITLE	COST	ID	NAME	ID	NAME
20026	Foundation	6.95	10019	Isaac Asimov	60014	Doubleday
20027	Foundation and Empire	6.95	10019	Isaac Asimov	60014	Doubleday
20028	Second Foundation	6.95	10019	Isaac Asimov	60014	Doubleday
20051	Softwar	10.95	10018	Denis Beneich	60013	Holt, Rinehart and Winston
20051	Softwar	10.95	10017	Thiery Breton	60013	Holt, Rinehart and Winston
20052	The Pentecost Project	11.95	10017	Thiery Breton	60013	Holt, Rinehart and Winston
20024	The Memory of Earth	18.95	10011	Orson Scott Card	60011	TOR
20074	The Hunt for Red October	24	10021	Tom Clancy	60017	Putnam
20075	The Cardinal in the Kremlin	14	10021	Tom Clancy	60017	Putnam
20079	The Sum of All Fears	14.95	10021	Tom Clancy	60017	Putnam
20078	Patriot Games	17.95	10021	Tom Clancy	60017	Putnam
20077	Executive Orders	21	10021	Tom Clancy	60017	Putnam
20076	Clear and Present Danger	14	10021	Tom Clancy	60017	Putnam
20031	Jurassic Park	19.95	10020	Michael Crichton	60015	Knopf
ID	TITLE	COST	ID	NAME	ID	NAME
20036	Airframe	6.95	10020	Michael Crichton	60015	Knopf
20035	Timeline	26.95	10020	Michael Crichton	60020	Random House
20034	The Andromeda Strain	6.95	10020	Michael Crichton	60015	Knopf
20032	Rising Sun	21.95	10020	Michael Crichton	60015	Knopf
20033	Disclosure	21.95	10020	Michael Crichton	60015	Knopf
20021	Inca Gold	24	10012	Clive Cussler	60012	Simon and Schuster
20022	Shock Wave	24	10012	Clive Cussler	60012	Simon and Schuster
20023	Sahara	24	10012	Clive Cussler	60012	Simon and Schuster
20012	The Negotiator	19.95	10025	Frederick Forsyth	60018	Bantam
20013	Icon	26.95	10025	Frederick Forsyth	60018	Bantam
20014	The Fist of God	12.95	10025	Frederick Forsyth	60018	Bantam
20015	The Fourth Protocol	14.95	10025	Frederick Forsyth	60018	Bantam
20016	The Dogs of War	14.95	10025	Frederick Forsyth	60018	Bantam
20055	The Society of Mind	16.95	10014	Eric L. Harry	60016	Harper Collins
ID	TITLE	COST	ID	NAME	ID	NAME
20061	Talking God	24	10023	Tony Hillerman	60016	Harper Collins
20069	The Blessing Way	22	10023	Tony Hillerman	60016	Harper Collins
20068	Dance Hall of the Dead	22	10023	Tony Hillerman	60016	Harper Collins
20067	The Ghostway	24	10023	Tony Hillerman	60016	Harper Collins
20062	A Thief of Time	24	10023	Tony Hillerman	60016	Harper Collins
20063	Sacred Clowns	24	10023	Tony Hillerman	60016	Harper Collins
20064	The First Eagle	24	10023	Tony Hillerman	60016	Harper Collins
20066	Listening Woman	24	10023	Tony Hillerman	60016	Harper Collins
20065	Skinwalkers	24	10023	Tony Hillerman	60016	Harper Collins
20025	The Cyberiad	12.95	10026	Stanislaw Lem	60019	Harcourt Brace Jovanovich
20042	The Keys of This Blood	22.95	10022	Malachi Martin	60012	Simon and Schuster

39 rows selected.



**Use the Oracle 10g server for questions 8 thru 11.**

8. List the book(id, title, and cost) and author(id, name) and publisher(id, name) info for all books in the collection, written by an author whose name includes a double vowel sequence. In your solution, I want you to use a regular expression to identify the double vowel sequence (eg., 'ie', 'oo', 'ai', ... Note: there are  $5 * 5 = 25$  possible double vowel sequences in English).

```
SELECT book.ID,book.TITLE,book.COST,
author.ID,author.NAME,
publisher.ID, publisher.NAME
FROM book
JOIN writtenby
ON book.ID = writtenby.bookID
JOIN author
ON author.iD = writtenby.authorID
JOIN publisher
ON book.PUBLID = publisher.ID
AND regexp_like (author.NAME,['aeiou]{2}')
```

ID	TITLE	COST	ID_1	NAME	ID_2	NAME_1
1 20026	Foundation	6.95	10019	Isaac Asimov	60014	Doubleday
2 20027	Foundation and Empire	6.95	10019	Isaac Asimov	60014	Doubleday
3 20028	Second Foundation	6.95	10019	Isaac Asimov	60014	Doubleday
4 20031	Jurassic Park	19.95	10020	Michael Crichton	60015	Knopf
5 20032	Rising Sun	21.95	10020	Michael Crichton	60015	Knopf
6 20033	Disclosure	21.95	10020	Michael Crichton	60015	Knopf
7 20034	The Andromeda Strain	6.95	10020	Michael Crichton	60015	Knopf
8 20035	Timeline	26.95	10020	Michael Crichton	60020	Random House
9 20036	Airframe	6.95	10020	Michael Crichton	60015	Knopf
10 20041	Masters of Deception	13.95	10016	Joshua Quittner	60016	Harper Collins
11 20051	Softwar	10.95	10017	Thiery Breton	60013	Holt, Rinehart and Winston
12 20051	Softwar	10.95	10018	Denis Beneich	60013	Holt, Rinehart and Winston
13 20052	The Pentecost Project	11.95	10017	Thiery Breton	60013	Holt, Rinehart and Winston

9. List the book(id, title, and cost) and author(id, name) and publisher(id, name) info for all books in the collection, with a copyright year older than your instructor (ie. before 1975 :-). [4 rows]

```
SELECT book.ID,book.TITLE,book.COST,
author.ID,author.NAME,
publisher.ID, publisher.NAME
FROM book
JOIN writtenby
ON book.ID = writtenby.bookID
JOIN author
ON author.iD = writtenby.authorID
JOIN publisher
ON book.PUBLID = publisher.ID
AND book.COPYYEAR < 1975
```

ID	TITLE	COST	ID_1	NAME	ID_2	NAME_1
1 20025	The Cyberiad	12.95	10026	Stanislaw Lem	60019	Harcourt Brace Jovanovich
2 20026	Foundation	6.95	10019	Isaac Asimov	60014	Doubleday
3 20027	Foundation and Empire	6.95	10019	Isaac Asimov	60014	Doubleday
4 20028	Second Foundation	6.95	10019	Isaac Asimov	60014	Doubleday

10. List the book(id, title, and cost) and author(id, name) and publisher(id, name) info for all coauthored books in the collection. (2 pts). [4 rows]

```
SELECT book.ID,book.TITLE,book.COST,
author.ID,author.NAME,
publisher.ID, publisher.NAME
FROM book
JOIN writtenby
ON book.ID = writtenby.bookID
JOIN author
ON author.iD = writtenby.authorID
JOIN publisher
ON book.PUBLID = publisher.ID
AND book.ID IN (SELECT bookID
FROM writtenby
GROUP BY bookID
HAVING COUNT(*) > 1)
```

	ID	TITLE	COST	ID_1	NAME	ID_2	NAME_1
1	20051	Softwar	10.95	10018	Denis Beneich	60013	Holt, Rinehart and Winston
2	20051	Softwar	10.95	10017	Thiery Breton	60013	Holt, Rinehart and Winston
3	20041	Masters of Deception	13.95	10016	Joshua Quittner	60016	Harper Collins
4	20041	Masters of Deception	13.95	10015	Michelle Slatella	60016	Harper Collins

**Use the MySQL server for the remaining questions.**

11. List the book(id, title, and cost) and author(id, name) info for all books in the collection, that cost more than the average book price, but less than \$23. [9 rows]

```
SELECT book.ID,book.TITLE,book.COST,author.ID,author.NAME
FROM book
JOIN writtenby
ON book.ID = writtenby.bookID
JOIN author
ON author.iD = writtenby.authorID
AND book.COST > ( SELECT AVG(COST) FROM book)
AND book.COST < 23
```

Result Grid					
Filter Rows:					
Export:   Wrap Cell Content:					
	ID	TITLE	COST	ID	NAME
	20024	The Memory of Earth	18.95	10011	Orson Scott Card
	20031	Jurassic Park	19.95	10020	Michael Crichton
	20032	Rising Sun	21.95	10020	Michael Crichton
	20033	Disclosure	21.95	10020	Michael Crichton
	20077	Executive Orders	21.00	10021	Tom Clancy
	20042	The Keys of This Blood	22.95	10022	Malachi Martin
	20068	Dance Hall of the Dead	22.00	10023	Tony Hillerman
	20069	The Blessing Way	22.00	10023	Tony Hillerman
	20012	The Negotiator	19.95	10025	Frederick Forsyth

Result 1 x			
Output			
Action Output			
#	Time	Action	Message
1	10:33:18	SELECT book.ID,book.TITLE,book.COST,author.ID,author.NAME FROM ...	9 row(s) returned

12. List the book(id, title, and cost) and author(id, name) info for all books in the collection, that were written by an author whose last name starts with the letter 'C'. [16 rows]

```
SELECT book.ID,book.TITLE,book.COST,
author.ID,author.NAME,
publisher.ID, publisher.NAME
FROM book
JOIN writtenby
ON book.ID = writtenby.bookID
JOIN author
ON author.iD = writtenby.authorID
JOIN publisher
ON book.PUBLID = publisher.ID
AND author.LASTNAME LIKE 'C%'
```

	ID	TITLE	COST	ID	NAME	ID	NAME
	20024	The Memory of Earth	18.95	10011	Orson Scott Card	60011	TOR
	20021	Inca Gold	24.00	10012	Clive Cussler	60012	Simon and Schuster
	20022	Shock Wave	24.00	10012	Clive Cussler	60012	Simon and Schuster
	20023	Sahara	24.00	10012	Clive Cussler	60012	Simon and Schuster
	20031	Jurassic Park	19.95	10020	Michael Crichton	60015	Knopf
	20032	Rising Sun	21.95	10020	Michael Crichton	60015	Knopf
	20033	Disclosure	21.95	10020	Michael Crichton	60015	Knopf
	20034	The Andromeda Strain	6.95	10020	Michael Crichton	60015	Knopf
	20036	Airframe	6.95	10020	Michael Crichton	60015	Knopf
	20074	The Hunt for Red October	24.00	10021	Tom Clancy	60017	Putnam
	20075	The Cardinal in the Kremlin	14.00	10021	Tom Clancy	60017	Putnam
	20076	Clear and Present Danger	14.00	10021	Tom Clancy	60017	Putnam
	20077	Executive Orders	21.00	10021	Tom Clancy	60017	Putnam
	20078	Patriot Games	17.95	10021	Tom Clancy	60017	Putnam
	20079	The Sum of All Fears	14.95	10021	Tom Clancy	60017	Putnam
	20035	Timeline	26.95	10020	Michael Crichton	60020	Random House

Result 2 x

Output



Action Output

#	Time	Action	Message
1	10:35:45	SELECT book.ID,book.TITLE,book.COST, author.ID,author.NAME, publis...	16 row(s) returned

13. **Analysis.** Why are the number of rows in the result sets for questions 1 and 6 the same? Question 6 requires you to join 4 tables, and question 1 requires you to join 3 tables, so why aren't there more rows in the result set for question 6?

The amount of rows will not be higher than the max rows of the largest table. In this case the largest table is the “writtenby” (42 rows).

The screenshot shows a SQL query execution window with the following content:

```

Enter statements:
SELECT COUNT(*) FROM book;
SELECT COUNT(*) FROM writtenby;
SELECT COUNT(*) FROM author;
SELECT COUNT(*) FROM publisher;
  
```

Below the input area are buttons: Execute, Save Script, Clear Screen, and Cancel.

The results are displayed in a table with two columns: the query text and the count value.

Query	Count
SELECT COUNT(*) FROM book;	40
SELECT COUNT(*) FROM writtenby;	42
SELECT COUNT(*) FROM author;	15
SELECT COUNT(*) FROM publisher;	11

14. **Analysis.** Explain the purpose of the writtenby table. Why is this table needed? Is there any new information in this table that isn't already present in the Author and Book tables? So what's its purpose? What does it allow us to do that we can't do with just the Author and Book tables?

The writtenby table provides a bookid and authorid while the other tables provide their own IDs, but the writtenby links the books to the authors. The purpose of the table is to link bookid with the id of the book table and authorid with the id of the authors to find out who wrote what book. In just the book and author table you cannot find out who wrote what book without the writtenby table.