1. חישוב עלות ספר:

∏ b.bookId, ρk (sum(b.currentStock\*b.bookCost)/sum(b.currentStock)) **(** ẟ currentStock > 0 }ρb (bookorderline) **) ᵞ** (bookId)

2. הצגת כל הספרים שנמצאים במלאי:

∏ b.bookName, bol.bookId **(** ẟ bol.currentStock > 0 and bol.orderLineStatus = 1 }ρb (book)

⋈ bol.bookId = b.bookId }ρbol ( bookorderline) **) ᵞ** (bol.bookId)

3. הצגת כל ההזמנות הפתוחות:

∏Customerorderline.bookOrderId, people.firstName, people.lastName, customerorderline.lineStatus, customerorder.orderDate**(** ẟ customerorderline.lineStatus != 1 (customerorder)

⋈ customerorder.orderId = customerorderline.orderId ( customerorderline )

customerorder.customerId = people.id (people) **)** ⋈

4. הצגת כל הלקוחות:

∏ people.firstName, people.lastName, people.city, people.id**(** ẟ (customer)

⋈ customer.customerId = people.id (people) **)**

5. הצגת כל הספקים:

ẟ (supplier)

6. הצגת כל ההזמנות בין תאריכים:

∏ customerorder.orderId, customerorder.orderDate, ρprice (sum( customerorderline.price\*customerorderline.quantity) **(** ẟ customerorder.orderStatus = 1 and customerorder.orderDate >'2016-1-1' and customerorder.orderDate <'2018- 1-1' } (customerorder)

⋈ customerorderline.orderId = customerorder.orderId }( customerorderline) **)**

**ᵞ** (customerorderline.orderId)

7. הצגת כל ההנחות הגלובליות לפי ספרים:

∏ people.firstName, people.lastName, globaldiscount.discountId, globaldiscount.startDate, globaldiscount.endDate, book.bookName, globaldiscount.discountPercentage **(** ẟ globaldiscount.startDate <'2017-2-10' and globaldiscount.endDate > '2017-2-10' (globaldiscount)

⋈ book.bookId = globaldiscount.bookId ( book )

⋈book.bookId = bookauthor.bookId ( bookauthor )

people.id = bookauthor.authorId (people) **)**  ⋈

8. בדיקה אם ספר נמצא במלאי:

∏ b.bookName, bol.bookId, ρstock (sum(bol.currentStock)) **(** ẟ bol.currentStock > 0 and bol.orderLineStatus = 1 and b.bookId }ρb (book) **)** ⋈ bol.bookId = b.bookId ρbol (bookorderline)

9. רשימת כל הספקים של ספר x:

∏supplier.supplierName, suppliercatalog.bookPrice, book.bookName **(** ẟ book.bookId= 1 (suppliercatalog)

⋈ suppliercatalog.bookId = book.bookId ( book )

suppliercatalog.supplierId = supplier.supplierId (supplier)**)** ⋈

10. כמות מכירת ספר מתאריך:

∏ ρbookcount (sum(customerorderline.quantity)), book.bookName

**(** ẟ customerorderline.opDate >'2016-3-3' and book.bookId = 10 }(customerorderline) **)**

⋈ customerorderline.bookOrderId = bookorderline.orderId (bookorderline)

⋈ book.bookId = bookorderline.bookId (book)

**ᵞ** ( book.bookId)

11.טבלת לקוחות :

ẟ (customer) ⋈ customer.customerId = people.id (people)

12. הצגת כמות מכירות ספרים לפי לקוח לפי תאריך:

∏ people.id, people.firstName, people.lastName, ρtotal (sum(customerorderline.quantity))

**(** ẟ customerorderline.lineStatus = 1 and people.id = 302999001 and customerorderline.opDate >'2016-1-1' }(customerorderline) **)**

⋈ customerorderline.orderId = customerorder.orderId (customerorder)

⋈ people.id = customerorder.customerId (people)

**ᵞ** ( people.id)

13. מציאת לקוח שקנה הכי הרבה ספרים לפי תאריך:

∏ people.id, people.firstName, people.lastName, ρtotal (sum(customerorderline.quantity))

**(** ẟ customerorderline.lineStatus = 1 and customerorderline.opDate >'2016-1-1' }(customerorder) **)**

⋈ customerorder.orderId = customerorderline.orderId (customerorderline)

⋈ customerorderline.bookOrderId = bookorderline.orderId (bookorderline)

⋈ people.id = customerorder.customerId (people)

**ᵞ** ( people.id)

**τ** ( total asc)

14. הצגת כל ההזמנות מספקים בין תאריכים:

∏ book.bookName, bookorderline.inDate, bookorderline.quantity, bookorderline.bookCost, bookorderline.orderLineStatus**(** ẟ bookorderline.inDate >'2017-1-1' and bookorderline.inDate <'2018-1-1' (bookorderline) ⋈ book.bookId = bookorderline.bookId (book) **)**

15. הצגת כל ההזמנות מספקים שהפכו למכירות:

∏ bookorderline.orderId, book.bookName, bookorderline.inDate

**(** ẟ bookorderline.orderLineStatus =1 and

bookorderline.quantity != bookorderline.currentStock and bookorderline.inDate >'2016-2-1' and bookorderline.inDate <'2018-1-1' (bookorderline) ⋈ book.bookId = bookorderline.bookId (book) **)**

16. הצגת סך ההנחות ללקוח מתאריך:

∏ people.id, people.firstName, people.lastName, ρdiscount (sum(bookorderline.bookCost\*1.5\*customerorderline.quantity)-(customerorderline.price\*customerorderline.quantity))

**(** ẟ customerorderline.lineStatus = 1 and customerorderline.opDate >'2016-1-1' and people.id = 302999006 }(customerorder) **)**

⋈ customerorder.orderId = customerorderline.orderId (customerorderline)

⋈ customerorderline.orderId = customerorderline.bookOrderId (bookorderline)

⋈ people.id = customerorder.customerId (people)

**ᵞ** ( customerorder.customerId)

17. הצגת הנחות לפי רבעונים:

∏ ρdiscount (sum(bookorderline.bookCost\*1.5\*customerorderline.quantity)-(customerorderline.price\*customerorderline.quantity))

**(** ẟ customerorderline.lineStatus = 1 and customerorderline.opDate >'2016-1-1' and customerorderline.opDate <'2018-1-1' }(customerorder) **)**

⋈ customerorder.orderId = customerorderline.orderId (customerorderline)

⋈ bookorderline.orderId = customerorderline.bookOrderId (bookorderline)

⋈ people.id = customerorder.customerId (people)

18. לקוחות חדשים מתאריך:

∏ people.id, people.firstName, people.lastName, ρstartdate min(customerorderline.opDate)

**(** ẟ customerorderline.lineStatus = 1 and customerorderline.opDate >'2017-1-10' }(customerorderline) **)**

⋈ customerorderline.orderId = customerorder.orderId (customerorder)

⋈ people.id = customerorder.customerId (people)

**ᵞ** ( people.id)

19. סך המכירות של ספק בין תאריכים:

∏ supplier.supplierId, supplier.supplierName,

ρtotalsum sum(bookorderline.bookCost\*bookorderline.quantity)

**(** ẟ supplier.supplierId = 302999006 and bookorderline.inDate >'2017-1-10' and bookorderline.inDate<=2018-1-1 }(bookorderline) **)**

⋈ bookorderline.supplierId = supplier.supplierId (supplier)

**ᵞ** ( supplier.supplierId)

20. סך המכירות של מוכר:

∏ people.id, ρtotalsum sum(customerorderline.price\*customerorderline.quantity)

**(** ẟ customerorderline.lineStatus = 1 and people.id = 302999006 and customerorderline.opDate >=2017-1-10 and customerorderline.orderId <=2018-1-1 }(salesman) **)**

⋈ people.id = salesman.id (people)

⋈ customerorder.sakesmanId = people.id (customerorder)

⋈ customerorder.orderId = customerorderline.orderId (customerorderline)

**ᵞ** ( people.id)

21. 10 הספרים הכי נמכרים לפי תאריכים:

∏ book.bookName, ρtotalsum sum(customerorderline.quantity)

**(** ẟ customerorderline.lineStatus = 1 and customerorderline.opDate >='2016-1-1' and customerorderline.opDate <='2018-1-1' }(customerorderline) **)**

⋈ customerorderline.bookOrderId = bookorderline.orderId (bookorderline)

⋈ book.bookId = bookorderline.bookId (book)

**ᵞ** ( book.bookId)

**τ** ( totalsum asc limit 10)