מסמך אלגברה רלציונית:

1. π store_book_id(σ title='__' ∧ location≠'sold'(books ⋈ stock))

2. σ rownum()>0 ∧ rownum()≥1 (τ date_first
   (π customer_id, ρ datefirst MIN(order_date)(book_order))
   ∪
   (π customer_id, ρ datefirst MIN(transaction_date)(transaction_date)))

3. π store_book_id, MIN(date_bought)(payments)

4. σ(book_order)

5. π COUNT(location)(σ title='__' and location='sold'(books ⋈ stock))

6. σ rownum()>0 ∧ rownum()≥1 (τ COUNT(book_id)(γ book_id
   (π forename, surname(σ '__'< transaction <'__' (
   store_transaction ⋈ payments ⋈ stock ⋈ books_author ⋈ author)))))

7. σ rownum()>0 ∧ rownum()≥3 (τ no_of_books_bought (
   π no_of_books_bought, person_id, forename, surname(customer ⋈ person)))

8. σ rownum()>0 ∧ rownum()≥1 (τ COUNT(translator)(γ book_id
   (ρ tbl2 (π book_id, title (π book_id, translator
   (ρ tbl (τ book_id (γ publication_id
   (π store_book_id, book_id, translator, publication_id, title
   (σ location≠'sold' (publication ⋈ books ⋈ stock)))))))))))

9. τ transaction_id (π transacion_id, retail_price, title, transaction_date
(σ customer_id='__'(customer ⋈ store_transaction ⋈ payments ⋈ person ⋈
stock ⋈ books ⋈ book_prices)))

10. τ order_date (π book_id, customer_id, order_date (σ customer_id='__'
(book_order ⋈ customer)))
σ (ρ tbl1 (τ order_date (π customer_id, order_date, book_id (σ customer_id='__'
(book_order ⋈ customer))))
ρ tbl2 (τ transaction_date (π transaction_date, book_id (σ customer_id='__'
(transaction_date ⋈ stock ⋈ payments)))))

11. σ rownum()>0 ∧ rownum()≥1 (π weight (σ title='__' ∧ location≠'sold'
(stock ⋈ publication ⋈ books)))

12. π customer_id, delivery.* (ρ trans_id (σ COUNT(transaction_id) > 1
(γ transaction_id (π transaction_id (σ cutomer_id='__'
(store_transaction ⋈ delivery))))) ⋈ store_transaction ⋈ delivery

13. π delivery_status (σ tracking_no='__' (delivery ⋈ store_transaction))

14. π SUM(delivery_cost)(σ month(transaction_date='__' ∧ service_provider='Xpress'
(delivery ⋈ store_transaction)))

15. π SUM(total_book_cost)(σ payment_method='bit' ∧ month(transaction_date='__'
(payments ⋈ store_transaction)))

16. avg ← π AVG(total_book_cost)(σ datediff(transaction_date, now() < 365)
(payments ⋈ store_transaction))
π transaction_id, total_book_cost(σ total_book_cost > avg
(payments ⋈ store_transaction))

17. π (ρ Xpress (π COUNT(transaction_id (σ service_provider='Xpress' ∧
datediff(transaction_date, now()) ≤ 365))),
ρ Israel_Post (π COUNT(transaction_id (σ service_provider='Israel_Post' ∧
datediff(transaction_date, now()) ≤ 365))))

18. π delivery.* (γ tracking_no (σ (π tbl.*
(ρ tbl
(γ store_book_id (σ COUNT(tracking_no)<2
(π book_id, tracking_no, publication_id
(delivery ⋈ store_transaction ⋈ payments ⋈ stock))))
(ρ tbl2 (γ store_book_id (σ COUNT(tracking_no)<2
(π book_id, tracking_no, publication_id
(delivery ⋈ store_transaction ⋈ payments ⋈ stock)))))
⋈ delivery))))

19. γ customer_id (π person.*, phone_number
(σ datediff(transaction_date, now()) ≤ 730
(customer ⋈ store_transaction ⋈ person ⋈ person_phone_number ⋈
phone_number)))

20. π customer_id, title, book_id, order_date, store_book_id, location, date_bought
(σ location≠'sold' ∧ datediff(date_bought, now()) ≤ 14
(book_order ⋈ books ⋈ stock ⋈ payments))

21. π (ρ January (π COUNT(store_book_id) (σ date_bought < ''__'-02-01' (payments)))

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(π COUNT(store_book_id) (σ date_bought > ''__'-02-01' (payments)))),

(ρ Febuary (π COUNT(store_book_id) (σ date_bought < ''__'-03-01' (payments)))

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(π COUNT(store_book_id) (σ date_bought > ''__'-03-01' (payments)))),

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(ρ December (π COUNT(store_book_id) (σ date_bought < ''__+1'-01-01'

(payments)))

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(π COUNT(store_book_id) (σ date_bought > ''__+1'-01-01' (payments))))

22. π COUNT(*), ρ total_price (SUM(purchase_price))(σ '__' < date_bought < '__'

(payments ⋈ stock ⋈ book_prices))

23. π SUM(retail_price) - ρ profit(π SUM(purchase_price

(σ month(date_bought)='__' ∧ year(date_bought)='__')

(σ month(transaction_date)='__' ∧ year(transaction_date)='__'

(store_transaction ⋈ payments ⋈ stock ⋈ book_prices))))

24. π (ρ January (π AVG(total_book_cost)(σ month(transaction_date)='1' ∧
year(transaction_date)='__' (store_transaction ⋈ payments)))),
(ρ Febuary (π AVG(total_book_cost)(σ month(transaction_date)='2' ∧
year(transaction_date)='__' (store_transaction ⋈ payments)))),
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(ρ December (π AVG(total_book_cost)(σ month(transaction_date)='12' ∧
year(transaction_date)='__' (store_transaction ⋈ payments))))

25. π employee_id, forename, surname, monthly_hours
ρ Total (monthly_hours * 40)
(σ employee_id='__' ∧ month(monthly_payments)='__'
(salary ⋈ employee ⋈ person))

26. σ rownum()>0 ∧ rownum()≥1 (σ COUNT(employee_id))(π employee_id
(store_transaction ⋈ employee ⋈ person))