Ollivander's Inventory

Harry Potter and his friends are at Ollivander's with Ron, finally replacing Charlie's old broken wand.

Hermione decides the best way to choose is by determining the minimum number of gold galleons needed to buy each *non-evil* wand of high power and age. Write a query to print the *id*, *age*, *coins_needed*, and *power* of the wands that Ron's interested in, sorted in order of descending *power*. If more than one wand has same power, sort the result in order of descending *age*.

Input Format

The following tables contain data on the wands in Ollivander's inventory:

- *Wands:* The *id* is the id of the wand, *code* is the code of the wand, *coins_needed* is the total number of gold galleons needed to buy the wand, and *power* denotes the quality of the wand (the higher the power, the better the wand is).

Column	Type
id	Integer
code	Integer
coins_needed	Integer
power	Integer

- *Wands_Property:* The *code* is the code of the wand, *age* is the age of the wand, and *is_evil* denotes whether the wand is good for the dark arts. If the value of *is_evil* is *0*, it means that the wand is not evil. The mapping between *code* and *age* is one-one, meaning that if there are two pairs, $(code_1, age_1)$ and $(code_2, age_2)$, then $code_1 \neq code_2$ and $age_1 \neq age_2$.

Column	Type
code	Integer
age	Integer
is_evil	Integer

Sample Input

Wands Table:

id	code	coins_needed	power
1	4	3688	8
2	3	9365	3
3	3	7187	10
4	3	734	8
5	1	6020	2
6	2	6773	7
7	3	9873	9
8	3	7721	7
9	1	1647	10
10	4	504	5
11	2	7587	5
12	5	9897	10
13	3	4651	8
14	2	5408	1
15	2	6018	7
16	4	7710	5
17	2	8798	7
18	2	3312	3
19	4	7651	6
20	5	5689	3

Wands_Property Table:

code	age	is_evil
1	45	0
2	40	0
3	4	1
4	20	0
5	17	0

Sample Output

```
9 45 1647 10
12 17 9897 10
1 20 3688 8
15 40 6018 7
19 20 7651 6
11 40 7587 5
10 20 504 5
18 40 3312 3
20 17 5689 3
5 45 6020 2
14 40 5408 1
```

Explanation

The data for wands of *age 45* (code 1):

id	age	coins_needed	power
5	45	6020	2
9	45	1647	10

- The minimum number of galleons needed for $wand(age = 45, power = 2) = 6020$

- The minimum number of galleons needed for $wand(age = 45, power = 10) = 1647$

The data for wands of *age 40* (code 2):

id	age	coins_needed	power
14	40	5408	1
18	40	3312	3
11	40	7587	5
15	40	6018	7
17	40	8798	7
6	40	6773	7

- The minimum number of galleons needed for $wand(age = 40, power = 1) = 5408$

- The minimum number of galleons needed for $wand(age = 40, power = 3) = 3312$

- The minimum number of galleons needed for $wand(age = 40, power = 5) = 7587$

- The minimum number of galleons needed for $wand(age = 40, power = 7) = 6018$

The data for wands of *age 20* (code 4):

id	age	coins_needed	power
10	20	504	5
16	20	7710	5
19	20	7651	6
1	20	3688	8

- The minimum number of galleons needed for $wand(age = 20, power = 5) = 504$

- The minimum number of galleons needed for $wand(age = 20, power = 6) = 7651$

- The minimum number of galleons needed for $wand(age = 20, power = 8) = 3688$

The data for wands of *age 17* (code 5):

id	age	coins_needed	power
20	17	5689	3
12	17	9897	10

- The minimum number of galleons needed for $wand(age = 17, power = 3) = 5689$

- The minimum number of galleons needed for $wand(age = 17, power = 10) = 9897$

```sql
SELECT
    ID
    , AGE
    , COINS_NEEDED
    , POWER
FROM
    (WANDS w
    JOIN
        WANDS_PROPERTY p
        ON
            w.Code = p.Code)
WHERE
    p.is_evil       = 0
    AND w.coins_needed =
    (
        SELECT
            MIN(coins_needed)
        FROM
            Wands w1
            JOIN
                WANDS_PROPERTY p1
                ON
                    (
                        w1.code = p1.code
                    )
        WHERE
            w1.power   = w.power
            AND p1.age = p.age
    )
ORDER BY
    POWER DESC
    , AGE DESC
```