Problem K. Resource Calculator

Input file:	standard input
Output file:	standard output
Time limit:	2 seconds
Memory limit:	256 mebibytes

Grammy is playing her favorite video game. The characters in that game have multiple ascension levels, normal levels, and 3 talent levels.

A Character can upgrade its normal level by gaining experience. We assume that the only way for a character to gain experience is to feed it with coins and the following 3 types of experience materials. A "Wanderer's Advice" can provide 1 000 experience to a character, while an "Adventurer's Experience" can provide 5 000, a "Hero's Wit" can provide 20 000. Whenever a character gain 1 experience, 0.2 coins will be spent as upgrade cost. The amount of experience needed is in the following table.

Level	To Next	Level	To Next	Level	To Next
1	1000	31	30650	61	108950
2	1325	32	32250	62	112050
3	1700	33	33875	63	115175
4	2150	34	35550	64	118325
5	2625	35	37250	65	121525
6	3150	36	38975	66	124775
7	3725	37	40750	67	128075
8	4350	38	42575	68	131400
9	5000	39	44425	69	134775
10	5700	**40**	46300	**70**	138175
11	6450	41	50625	71	148700
12	7225	42	52700	72	152375
13	8050	43	54775	73	156075
14	8925	44	56900	74	159825
15	9825	45	59075	75	163600
16	10750	46	61275	76	167425
17	11725	47	63525	77	171300
18	12725	48	65800	78	175225
19	13775	49	68125	79	179175
20	14875	**50**	70475	**80**	183175
21	16800	51	76500	81	216225
22	18000	52	79050	82	243025
23	19250	53	81650	83	273100
24	20550	54	84275	84	306800
25	21875	55	86950	85	344600
26	23250	56	89650	86	386950
27	24650	57	92400	87	434425
28	26100	58	95175	88	487625
29	27575	59	98000	89	547200
30	29100	**60**	100875	**90**	MAX

A Character can upgrade its ascension level at normal level $20, 40, 50, 60, 70$, and 80. Before upgrading its ascension level at the corresponding normal level, the character cannot gain any more normal experience. If the amount of experience that a character can gain is less than the amount that an experience material can provide, the overflown part of experience are wasted, and will not spend coins. Additionally, extra ascension materials and coins are needed for upgrading the character's ascension level.

The first type of ascension materials is gems (Agnidus Agate, Prithiva Topaz, Shivada Jade, Vajrada

Amethyst, Varunada Lazurite, Vayuda Turquoise, and Brilliant Diamond). Each type of gemstone has 4 rareness levels: sliver, fragment, chunk, and gemstone.

The second type of ascension materials is boss drops, which has nothing special.

The third type of ascension materials is mob drops. Mob drops also have different rareness levels: common, rare, and epic.

The last type of ascension materials is local specialties, which is (probably) the character's favorite item in the world.

The amount of materials needed is in the following table.

Ascension level	Normal level	Gemstones	Boss Drops	Mob Drops	Specialties	Coins
0→1	20	1 Sliver	0	3 Common	3	20000
1→2	40	3 Fragments	2	15 Common	10	40000
2→3	50	6 Fragments	4	12 Rare	20	60000
3→4	60	3 Chunks	8	18 Rare	30	80000
4→5	70	6 Chunks	12	12 Epic	45	100000
5→6	80	6 Gemstones	20	24 Epic	60	120000

The 3 talent levels are upgraded mutually independently. In order to upgrade a talent level, 4 types of different materials and coins are needed.

The first type of talent level-up materials is normal mob drops, which is ths same as the third type of ascension materials.

The second type of talent level-up materials is talent books, which has 3 different rarities: Teachings, Guides, and Phylosophies.

The third type of talent level-up materials is weekly boss drops, which has nothing special.

The last type of talent level-up materials is "Crown of Insight", which is only used in the last talent level upgrade.

The amount of materials needed is in the following table.

Talent Level	Coins	Mob Drops	Talent Level-Up Materials		
			Talent Books	Weekly Boss Drops	Crown of Insight
1→2	12500	6 Common	3 Teachings	0	0
2→3	17500	3 Rare	2 Guides	0	0
3→4	25000	4 Rare	4 Guides	0	0
4→5	30000	6 Rare	6 Guides	0	0
5→6	37500	9 Rare	9 Guides	0	0
6→7	120000	4 Epic	4 Philosophies	1	0
7→8	260000	6 Epic	6 Philosophies	1	0
8→9	450000	9 Epic	12 Philosophies	2	0
9→10	700000	12 Epic	16 Philosophies	2	1

Grammy has a character with ascension level a_0, normal level l_0, and talent levels t_{10}, t_{20}, t_{30}, and she wants to upgrade the character to ascension level a, normal level l, and talent levels t_1, t_2, t_3. If the character gains experience after leveling up to normal level l, the extra experience gained is also considered as wasted experience and will not spend coins.

Grammy wants to ask you about the amount of materials needed. If there are multiple ways to use experience materials, choose a way that minimizes total experience wasted. If there are still multiple ways, choose a way that minimizes the amount of experience materials used.

Input

Each test contains multiple test cases. The first line contains a single integer T $(1 \leq T \leq 200\,000)$ — the

number of test cases. Description of the test cases follows.

The only line of each test case contains 10 integers $a_0, l_0, t_{10}, t_{20}, t_{30}, a, l, t_1, t_2, t_3$ $(0 \le a_0 \le a \le 6, 1 \le l_0 \le l \le 90, 1 \le t_{i0} \le t_i \le 10)$. It is guaranteed that the normal level can be reached while in the corresponding ascension level.

Output

For each test case print the answer in the following format.

Print 5 integers in the first line, indicating the number of coins needed, the number of local specialties needed, the number of boss drops needed, the number of weekly boss drops needed, and the number of "Crown of Insight" needed, respectively. It can be proved that under given constraints, the number of coins needed is an integer.

Print 3 integers in the second line, indicating the number of "Wanderer's Advice" needed, the number of "Adventurer's Experience" needed, the number of "Hero's Wit" needed, respectively.

Print 4 integers in the third line, indicating the number of Slivers, Fragments, Chunks, Gemstones needed, respectively.

Print 3 integers in the fourth line, indicating the number of common mob drops, rare mob drops, epic mob drops needed, respectively.

Print 3 integers in the fifth line, indicating the number of teachings, guides, and phylosophies needed, respectively.

Example

standard input	standard output
2	286535 0 0 0 0
0 1 1 1 1 0 20 4 5 6	1 0 6
0 20 3 3 3 1 30 6 6 6	0 0 0 0
	18 42 0
	9 39 0
	340085 3 0 0 0
	3 2 10
	1 0 0 0
	3 57 0
	0 57 0