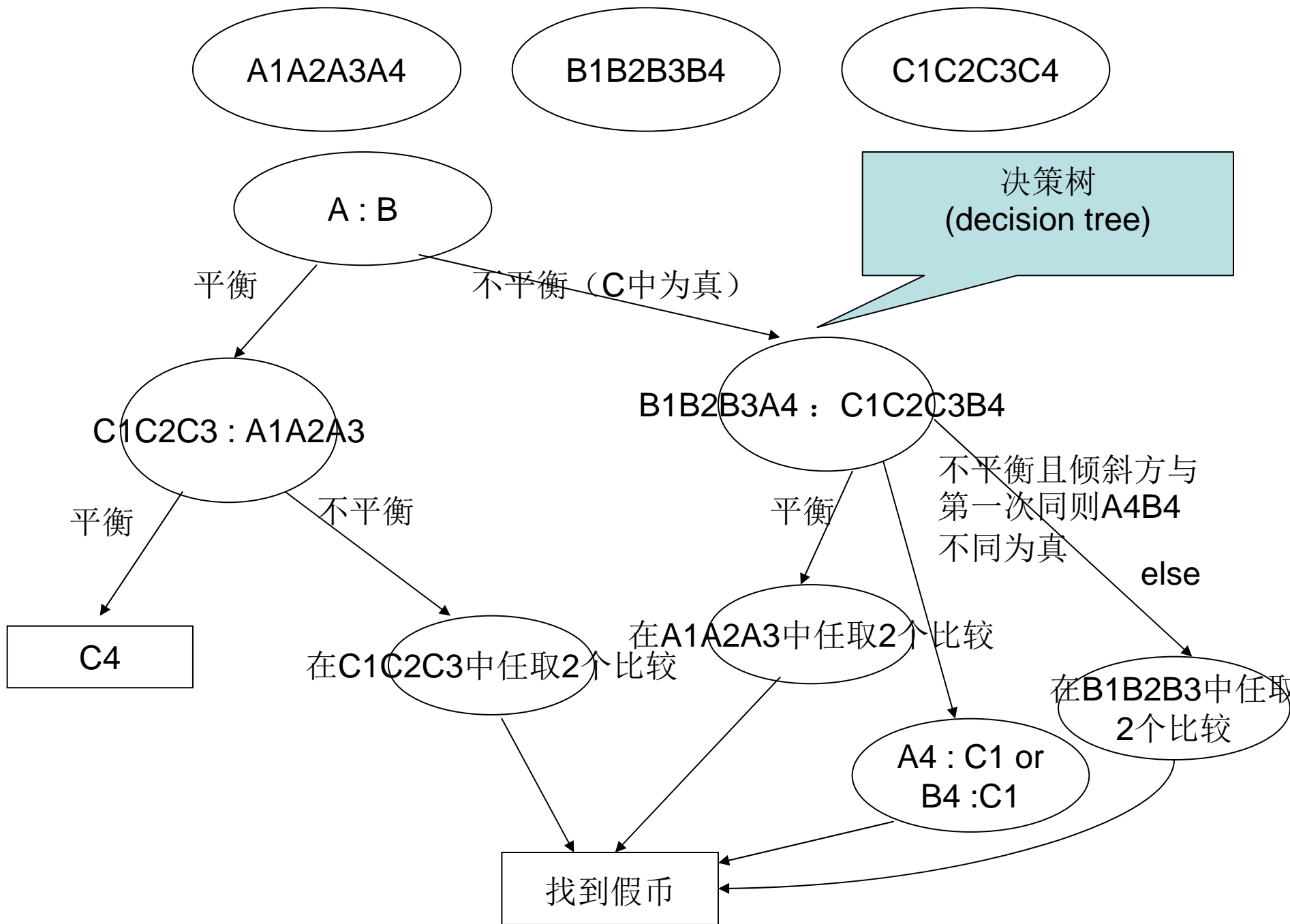


# 作业反馈

# Problem 1.8

- 12 个硬币，其中有一个伪币，如何使用一个天平（无刻度）用最少的称量次数找出伪币。

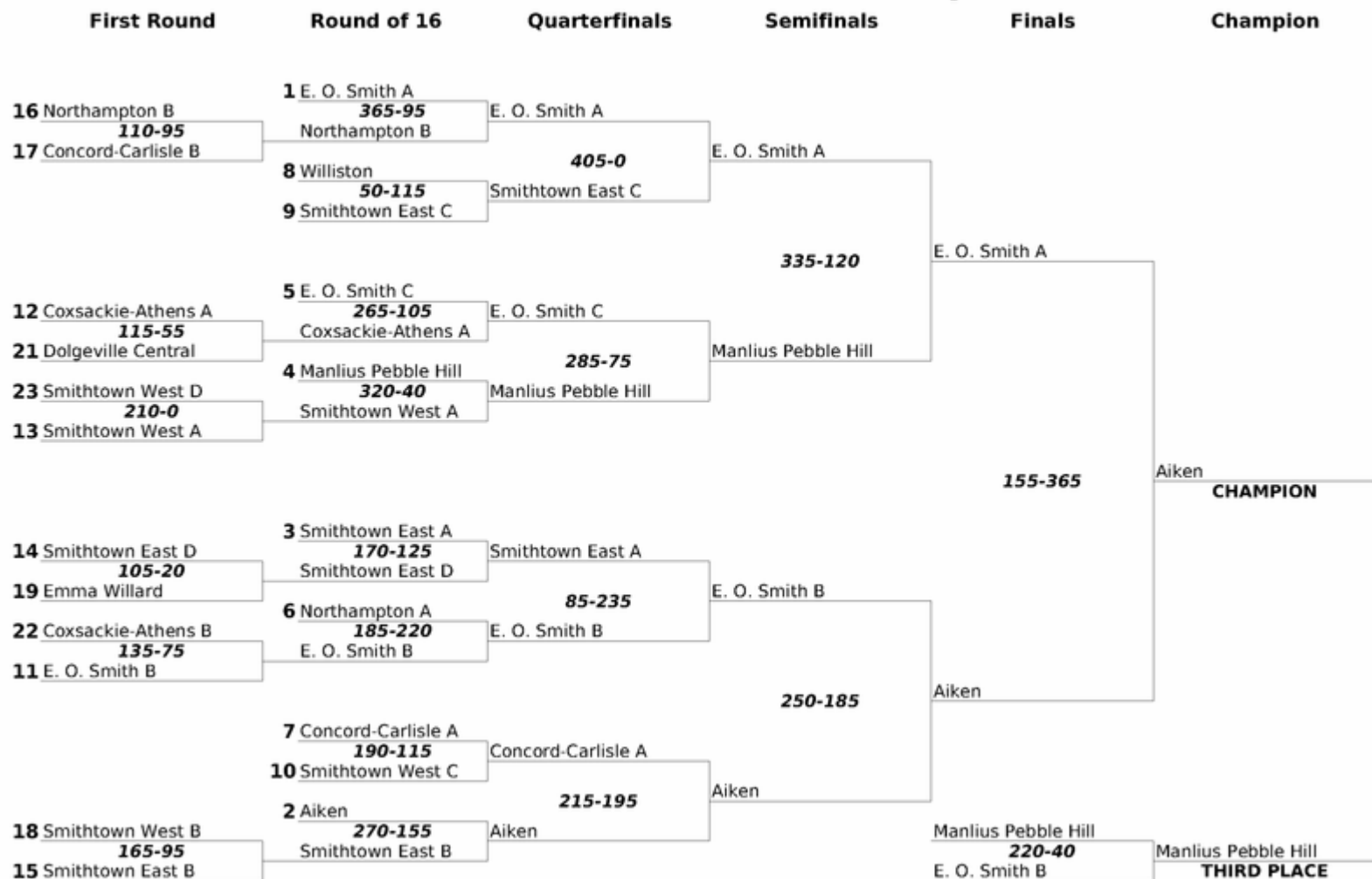


# Problem 1.4

- N组参加single game elimination tournament, 共有多少比赛?

- A **single-elimination tournament**, also called an **Olympic system tournament**, a **knockout**, **cup** or **sudden death tournament**, is a type of elimination tournament where the loser of each match or bracket is immediately eliminated from winning the championship or first prize in the event.

# MIT Beaver Academic Tournament – Playoff Bracket



# Problem 1.5

- $\Pr(1^{\text{st}} \text{ try to find}) = 1/7;$
- $\Pr(3^{\text{rd}} \text{ try to find}) = 6/7 * 5/6 * 1/5 = 1/7;$

# Problem 1.6

- 为使用字母表移位加密的一段文字解密
- RDSXCVIWTDGNXHUJCLTLXAAATPGCBDGT  
PQDJIXIAPITG
- AAA ? AA  $A \rightarrow a, b, c, \dots$
- ll, l (will let)
- Oo, o (zoo operate)
- Ss, s (Miss, steve)
- tt, t (Matt, talks)



# Problem 1.3

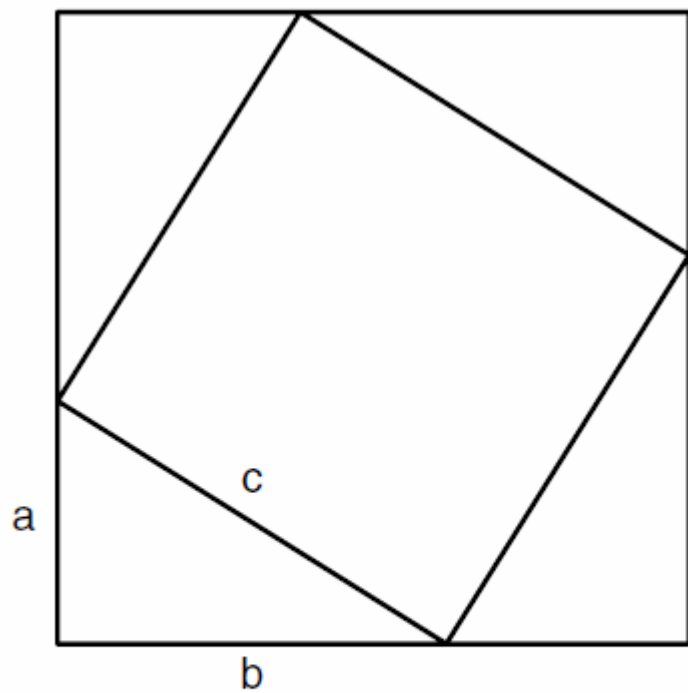
- Anagrams (移位构词)
- NOVA CURVE; (9, Evansville, Gloversville, Vancouver )
- NINE SLAP NAVY; (12, Pennsylvania )
- I HELD A HIP PAL; (12, Phillipsburg, Philadelphia )
- DIRTY ROOM; (9, dormitory)

# Problem 1.2

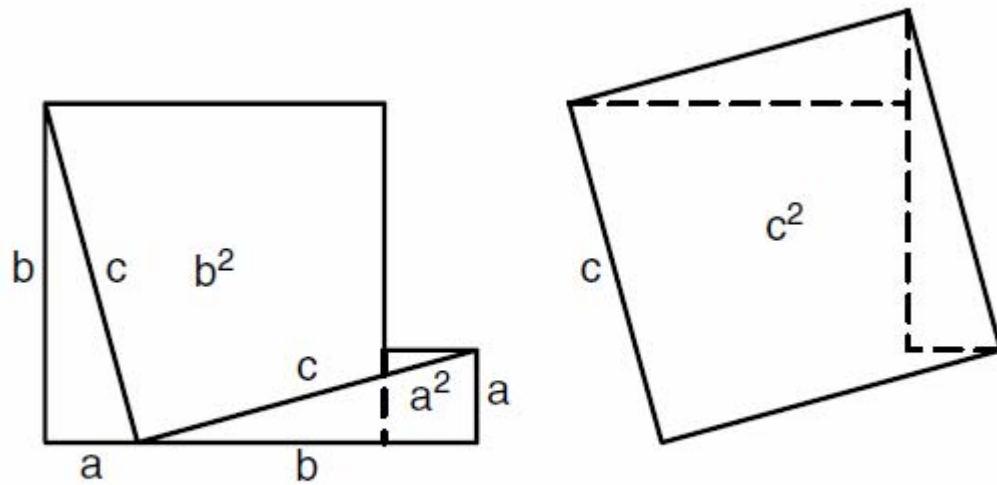
- 正读和反读一样
- 旋转180度后一样 (N, I, O, H, S, X, Z)
- NOON, SOS, SIS (口语, 妹妹), OHO (惊叹词)

# Picture proofs

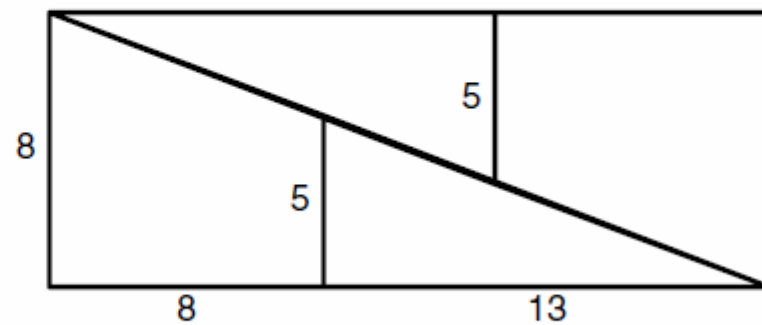
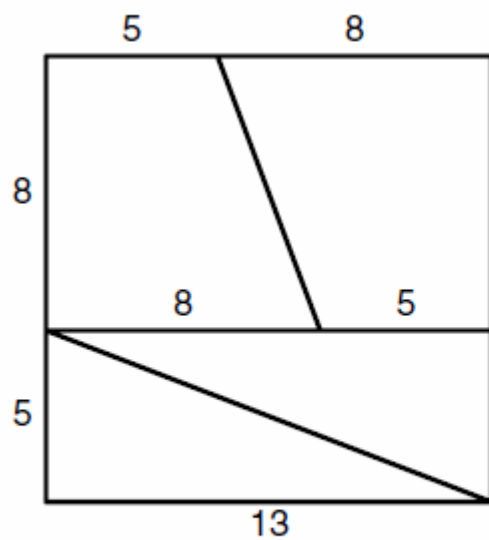
- Pythagoras' theorem (勾股定理)
- 示意图对于证明有帮助；但是示意图也会误导。



**FIGURE 27.1**  $a^2 + b^2 = c^2$



**FIGURE 27.2**  $a^2 + b^2 = c^2$



**FIGURE 27.3**  $169 = 13^2 = (8 + 13) \cdot 8 = 168$