Algorithmic Problem Solving [17ECSE309]
Riddles

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Rules:

- The Riddles are compulsary for APS students. It's also open for all. Anyone interested can submit. ANY ONE.

- A maximum of 10 submisions can be made per person before the deadline. The last submission will be considered ignoring all previous in case.

- A sample Riddle is provided with answer for better understanding.

- Please DO NOT reach out in case of queries and doubts. Solve it yourself.

- The answers will be made availabe in the same github repo where question was available. (after deadline)

- All riddles are math based.

- The first all correct submission wins a prize.

- Prize, yet to be decided. (There sure is an e-certificate)

- This puzzle is hosted in collaboration with Knit Arena Software Research and Services Private Limited.

Deadline: 30 March 2020, EOD
Submit Answers Here: https://tinyurl.com/aps-2020-riddles

RIDDLE 0
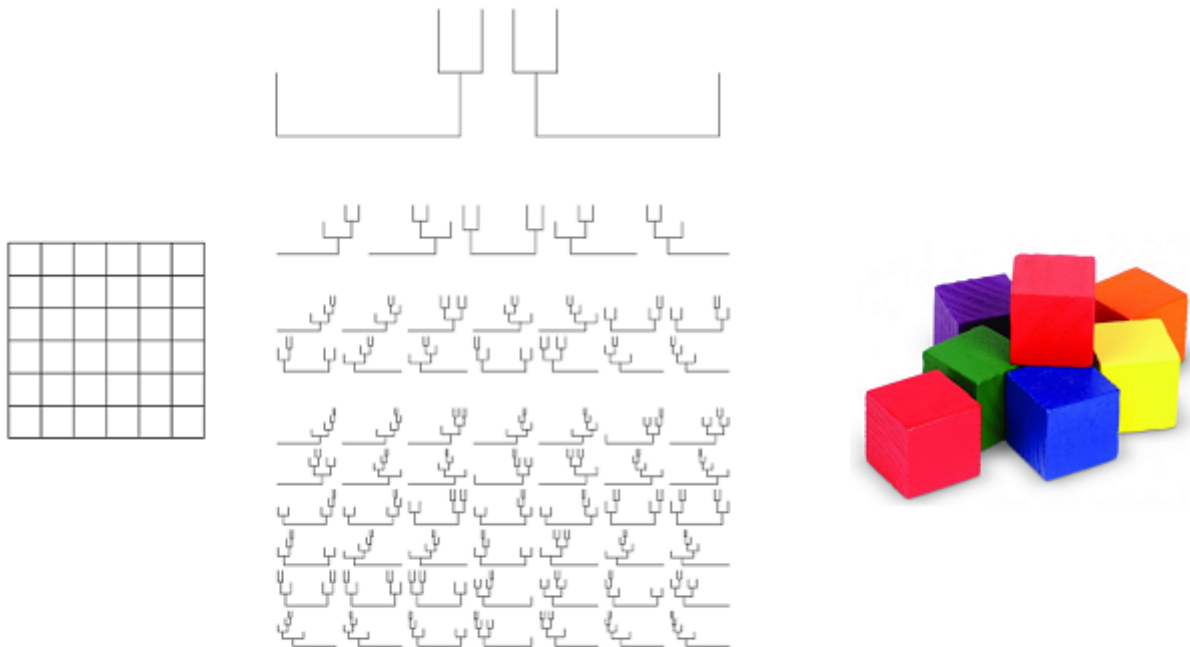
ONE

Answer: Catalan's Conjecture

The integers 2^3 and 3^2 are two powers of natural numbers whose values (8 and 9, respectively) are consecutive. The theorem states that this is the *only* case of two consecutive powers.

In the sequence of squares and cubes,
0, 1, 4, 8, 9, 16, 25, 27, 36, 49, 64, 81, 100, 121, 125, . . .
Catalan's Conjecture states that 8 and 9 are the only pair of consecutive numbers in this sequence.
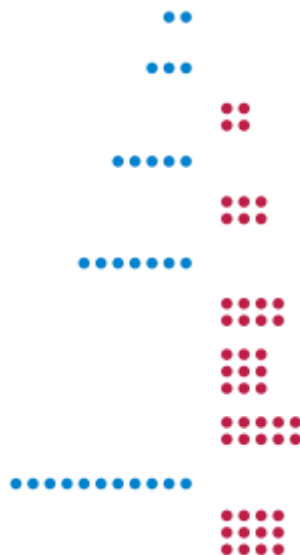
The middle figure is the Catalan numbers sequence. The difference between squares and cubes which makes the conjecture is 1. Those are the hints to arrive at the solution.

RIDDLE 01

Whatever we are counting here, the number,
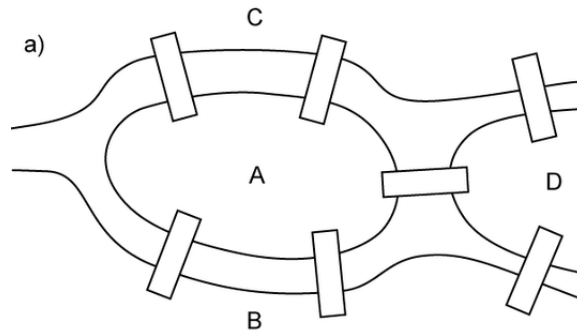
RIDDLE 02

$$6 = 3 + 3$$

$$12 = 7 + 5$$

RIDDLE 03

Not only you and me
Got one eighty degrees
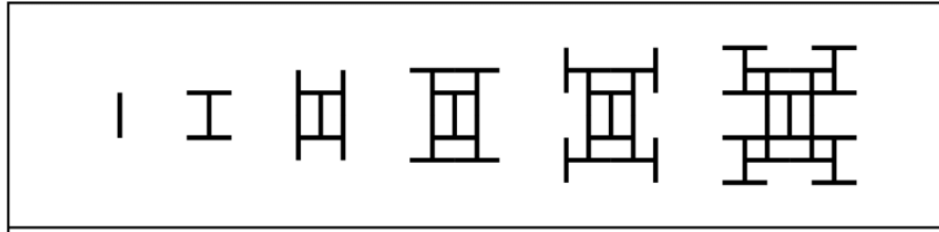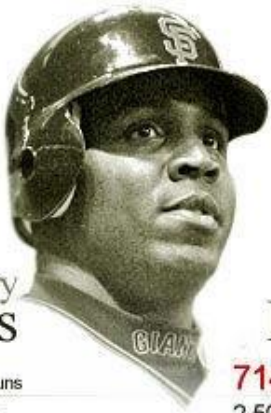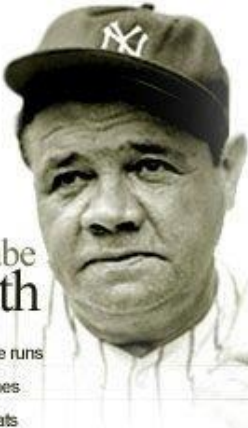And I'm caught in between

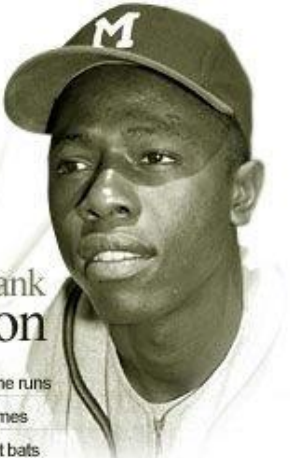Only prime belonging twice in twin primes

State of AL

The only remaining one.

Riddle 04

Riddle 04

RIDDLE 05

Barry **Bonds** — **714** home runs — 2,766 games — 9,236 at bats — 1 home run every 12.9 at bats

Babe **Ruth** — **714** home runs — 2,503 games — 8,399 at bats — 1 home run every 11.8 at bats

Hank **Aaron** — **755** home runs — 3,298 games — 12,364 at bats — 1 home run every 16.4 at bats

24432 and 24880 have this in common.

Riddle 06

151 wears alternate dress
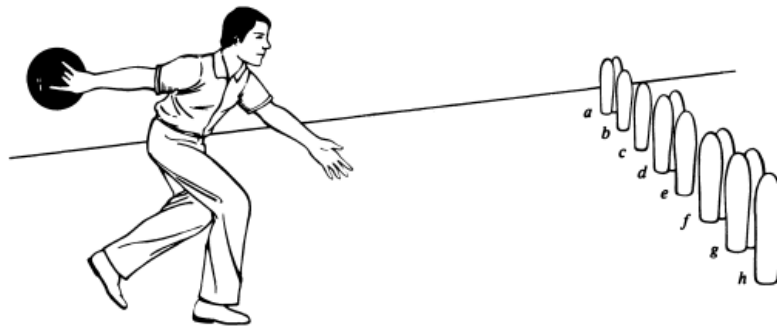
RIDDLE 07

When tie, one of the name in the game is spelled back.

Riddle 08

0

δ

1

(q, s, q+, s+, d+)

RIDDLE 09

$19 =$ ☺☺☺☺☺☺☺☺☺☺

$347 =$ ☺☺☺☺☺☺

b

Riddle 10

	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

You can do better!

~ ~ ~ BREAK A LEG ~ ~