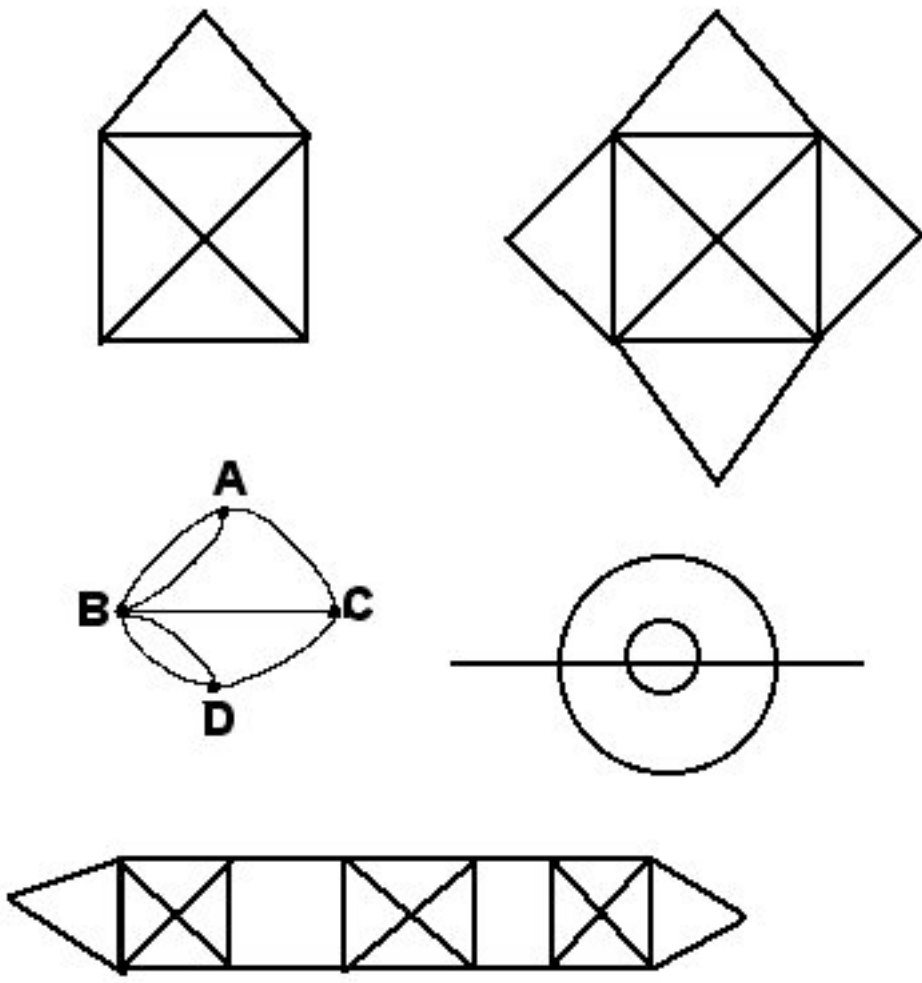


Today's puzzle is from the world of topology. In the shapes below, which ones can you draw without lifting your pencil from the paper AND without retracing any of your steps? Some can only be done if you start at the proper place, some you can do no matter where you start, and some are impossible to do.



Now, as an added bonus, which of the shapes of our cartoon characters, the five platonic solids, Tetrahedron, Hexahedron, Octahedron, Dodecahedron, and Icosahedron, can be formed out of one long piece of wire? No cutting of the wire, and no doubling up of the wire between any two of the vertices. This is a 3 dimensional version of the above puzzle.

Answer to last week's strategy game of 31. Please try the game before reading the answer, as you will get a lot more out of it then.

Strategy # 1: Pretty soon, people discover that whoever gets to 24, can get to 31, but their opponent can't. Thus the strategy is to get to 24. Next they see that if they get to 17, then they can get to 24 but their opponent can't. Thus the strategy is to get to 17. Next they see that if they get to 10, then they can get to 17 but their opponent can't. Thus the strategy is to get to 10. Next they see that if they start at 3, then they can get to 10 but their opponent can't. Thus the strategy is to go first and start at 3. If you add the smallest number and the largest number of the list (1 + 6) you get 7. Consecutive subtracting of 7 from your target number of 31, yields this winning sequence: 3, 10, 17, 24, 31.

Strategy # 2: At this time your opponent is pretty confident and may raise the stakes, if you are a betting person, and it is your opponent's turn to go first. Accept his bet, and then watch the following game:

Move	Player A	Player B	Running Total	Comment on the game
1	3		3	Player A follows his strategy, start at 3
2		4	7	
3	3		10	Player A continues his strategy, get to 10
4		4	14	
5	3		17	Player A continues his strategy, get to 17
6		4	21	
7	3		24	Player A continues his strategy, get to 24
8		4	28	
9	???			Player A has run out of 3's, !!!!!
10	2		30	Player A can't go over, has to pick 1 or 2
11		1	31	Player B wins by choosing a 1.

Player A, loses some money, but knows the real strategy! Go second, and run his or her opponent out of 3's as soon as they start to get on the sequence, 3 – 10 – 17 – 24 – 31. Any time they leave this sequence, you can jump on it and win the match. It is now player B's turn to go first, so Player A, ups the bet and invites player B to go first.

Strategy #3: Player A, sighs, and says, "I guess it's only fair", and goes first. The game is below.

Move	Player A	Player B	Running Total	Comment on the game
1		5	5	Player B starts at 5 !!!!
2	5		10	Player A continues his strategy, get to 10
3		2	12	Player B picks a 2.
4	5		17	Player A continues his strategy, get to 17
5		2	19	Player B throws in another 2, heh, heh
6	5		24	Player A has to, get to 24, and chooses 5
7		2	26	Player B chooses another 2, and smiles
8	????			Player A cannot get to 31, he is out of 5's
9	3		29	Player a reluctantly chooses a num < 5
10		2	31	Player B picks 2 to get to 31 !!!!

So, a little game, with some small gambling potential, or just bragging rights if your not into a friendly wager.

My two loves, other than wife, family and pets, are mathematics and games, sports, puzzles and so on. So you will see a fair amount of this.