

Worksheet #10

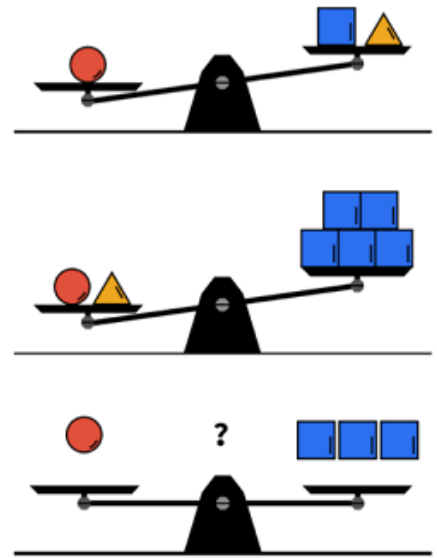
1. Neeraj has just found out his new javelin is broken. The only people who, apart from himself, had access to his treasured javelin were his three friends: Sindhu, Manpreet and Mirabai.

Neeraj questions each of them and here's what he finds, followed by their statements:

- All friends are telling the truth.
- Each friend is either guilty or not guilty.
- If exactly two friends are guilty, Sindhu is one of them.
- Sindhu — "If I'm guilty, exactly one more friend is guilty too."
- Manpreet — "If I'm not guilty, then Mirabai also is not guilty."
- Mirabai — "If I'm not guilty, then Manpreet also is not guilty."

Which of his friends – if any – broke the javelin?

2. Look at the first two weighing scales closely. Which side of the third scale is heavier?
3. Darsh and Rayansh are preparing a present for their father's birthday. If they work together, it'll take them 4 hours to finish. If, on the other hand, Darsh makes half of the gift and they prepare the other half together, they'll need 5 hours. How much time would Rayansh need if he was working alone?



4. $19! = 1 \times 2 \times 3 \times 4 \times \dots \times \dots \times 19$

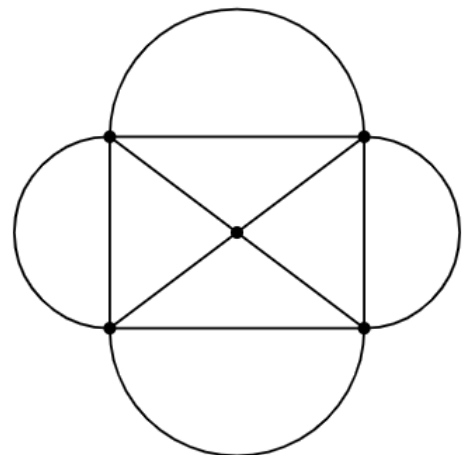
$19! = 121,675,100,40M,832,H00$

What is $T + M + H$?

5. This figure is made of a 6×8 rectangle with semicircles attached to its sides.

To trace the figure, you must follow these rules:

- You can start anywhere on the figure.
- You cannot lift your writing tool once you start tracing.
- You cannot trace over any segment more than once.



What is the longest path you can trace?