Pre-semester Worksheet

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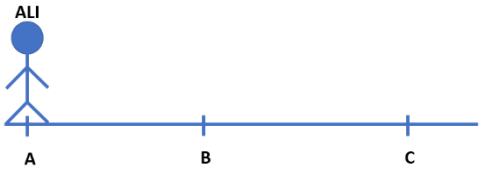
1. Four forces act on a point: 3N at 22^o, 7.5N at 115^o, 2.34N at 212^o and 5N at 304^o. What is the net force?

2. Ali needs to drink 3 cups of water to walk from point A to point B. To travel from A to C, he needs to drink 8 cups of water. How many cups of water he needs to drink to get from B to C?



3. 2 people carries water from point A to point B. Each person can carry 2 bottles of water each trip. Consider if we define 1 trip to be both persons walking from A to B to A, how many trips does the 2 people have to make to ensure 40 bottles gets from A to B?

4. Consider the case for Question 3, if I want the maximum number of trips to be 2, what is the minimum number of people do I need?

5. Imagine a door of some width and some height, at any one time, 3 people can go through this door simultaneously. If I want 6 people to be able to go through this door, what changes do I need to make to this door?

6. Consider a man walking from one end of a narrow corridor heading towards a door 100m from his original position. Imagine that on his way to that door, he runs into 5 people and he chats with each of them for 10 minutes. How long will he take to walk to that door if he can walk the 100m in 3 minutes if he does not talk to anyone?

7. Referring to question 6, what happens of instead of 5 people, he stops by and chats with 10 people instead, how long will he take to walk to that door?

8. Imagine walking down a hallway with a cup of water and finding a door. You open it, enter the room, close and locks the door behind you. You then walk towards another door at the opposite end of the room. Again, you open it, and enter the room, close and locks the door behind you. If no one else has the keys to these two doors, how many people has gone through those two doors?

9. A very lazy person needs to be paid to get up and walk. His walking rate is 5MYR per meter. I pay him 20MYR and he walks 3 meters. How much did it cost me to get him to stand up?