

Académie de Toulouse – sections européennes – session 2013

Subject # 14

*Please do not write on this exam paper
and give it back at the end of the test*

SPEED AND PERCENTAGES

Part 1 : Joan's club

Joan notices that 2 out of 7 players in her club are studying at university.
If there are 12 university students in her club, how many players are there in total?

In Joan's club, 60% of the adults are graduates.
Then 70 % of the graduates and 20 % of the non-graduates play tennis.
What is the percentage of the adults playing tennis in Joan's club?

Part 2 : Joan is outdoor

Joan is walking along a flat track at a constant speed of 6 km/h.
She has a follower along the same track, 12 km behind her, walking as fast as Joan does.
When each of them reaches the slope of the mountain, they begin to climb at a constant speed of 3 km/h.
What is the distance, in kilometres, between the two girls during the climb?

Joan's morning exercise consists in walking a distance of 1 km at 5 km/h, jogging a distance of 3 km at 10 km/h and fast walking 2 km at 6 km/h.
What is her average speed (in km/h)?
At what speed shall she run the next 2 km to increase her average to 8 km/h, for the whole exercise?