*Problem Solving – Number*

How long will it take a man to cross a barren and waterless desert one hundred miles wide if he can walk twenty miles a day but can carry only enough food and water for three days? For simplicity assume that the only places where supplies can be safely cached are at the points reached after one or more full days travel.

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*Sitting Around (1)*

Place twelve chairs in a circle and sit twelve people on them. One person then stands up, moves past two people and sits on the knee of the next person. Five more people do the same so that, after six moves, there are six pairs left sitting down.

To make it a bit more difficult! Once the direction of movement is fixed by the first move, then that must be the direction of all the moves.

*Sitting Around (2)*

Place ten chairs in a line. Sit two clearly differentiated groups of four people, alternatively one of one group one of the other, starting at one end of the line of chairs. By moving adjacent pairs onto the two empty chairs can you separate the eight people into the two different groups of four with the empty chairs in the same place as at the start?

To make this one a bit more difficult! Make the pair being moved change sides before they sit in their new position.

A hiker can average two miles per hour uphill and six miles per hour downhill. Going uphill and down, and if he spends no time at the summit, what will be his average speed for an entire trip?

A party of five explorers is on one bank of a river and a party of five warriors is on the other, and each group wishes to cross to the opposite side. The only means of transportation is a dug out canoe which will hold just three persons. Only one warrior and explorer know how to paddle. Moreover, for obvious reasons, it is unhealthy for the warriors to outnumber the explorers in the boat or on either shore.

Mrs Davies, Mrs Jones and Mrs Smith, whose first names are Dorothy, Helen and Mary, though not necessarily respectively, went shopping together one day. While in town, Mary spent twice as much as Helen and Helen spent three times as much as Dorothy. If Mrs Davies spent £3.85 more than Mrs Smith, what is each woman’ s full name?

If it takes twice as long for a passenger train to overtake a freight train as it takes two trains to pass when going in opposite directions, how many times faster than the freight train is the passenger train?