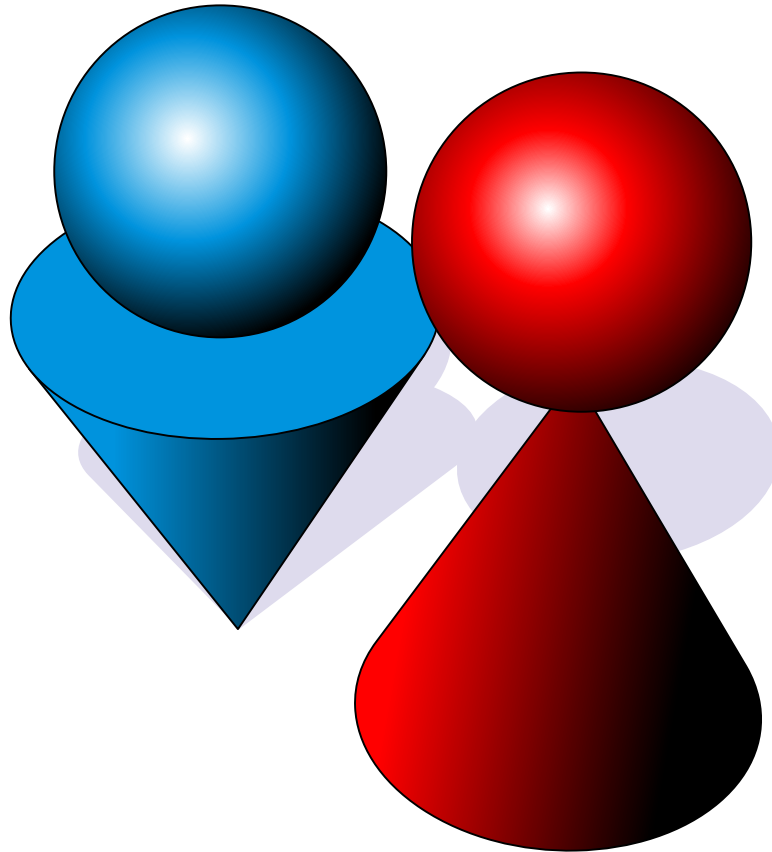


Kisses & Handshakes

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Kent and Hannah invited some of their friends at a dinner. Some friends arrived with their spouses while some arrived alone. Each guest greeted with every of the two hosts and with each other guest. When two men greeted each other there were handshaking. When two women greeted each other there were kissing. The same was true when a man and a woman greeted each other.

It is known 6 handshakes and 12 kisses have been done in total. Can you say how many guests arrived at the dinner, how many of them were in couples and how many of them were alone? Obviously, when two guests arrived as a couple

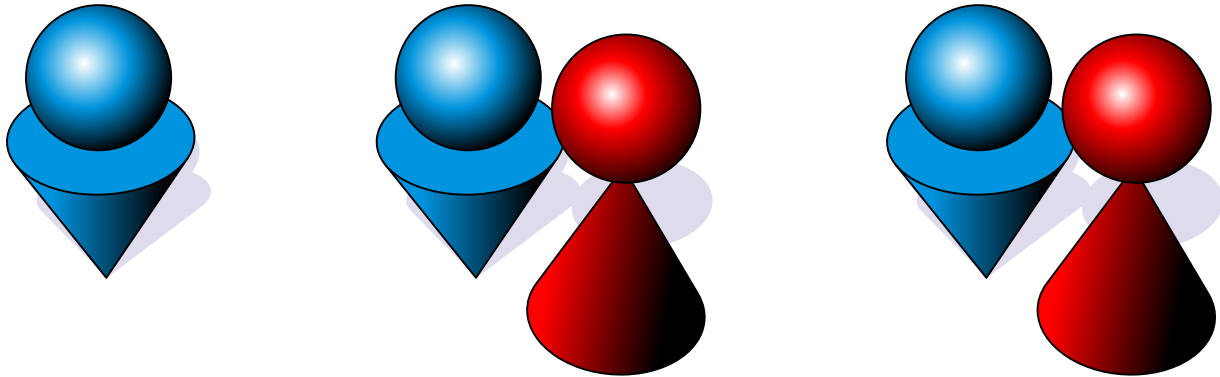
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According to the conditions of the puzzle handshakes were only between the men. Thus, the total number of the handshakes is defined by the number of men arrived. If there were two men in total, then only one handshake would be performed. If there were three men, then three handshakes would be performed between them. If there were four men, six handshakes would be performed. Thus, there were four men in total - one host (Kent) and three guests.

Now, how many women were at the dinner? Since three men arrived at the dinner, Hannah, the co-host, kissed with each of them, resulting in three kisses. 9 kisses are still left. If only one woman arrived, then she had to kiss Hannah (one more kiss), and even if she was alone she had to kiss all four men (three guests and Kent) - four more kisses. In total it makes 5 more kisses, which is not enough since 4 kisses are still left. Thus, one woman arrived is not enough.

Let's assume that three women arrived. Counting Hannah, that would be four of them. That would mean the women alone exchange six kisses. Even if all women arrived with their spouses, they each would need to kiss three men, totaled in 12 additional kisses. 6 plus 12 equals 16 kisses in total. Thus, three women arrived is too many.

The only version left - two women arrived at the dinner. Combined with Hannah they would exchange 3 kisses between each other. Added to Hannah's three kisses with male guests it makes 6 kisses so far. If both arrived women are alone, then they would kiss with each of the four men totaling in 8 kisses. 6 kisses plus 8 kisses is 2 kisses above 12. Thus, at least one of the arrived women was with the spouse. Then she would kiss only three men. The other arrived women would kiss four men. It makes 7 kisses in total. Still too many. Thus, both women arrived with their spouses resulting in three additional kisses for each of them with other men. In total it makes 12 kisses which finally satisfy the condition of the puzzle.

Let's summarize. Three men arrived at the dinner. Two of them arrived with their spouses, and one - alone. As a result 6 handshakes and 12 kisses have been done.