Multiplication without calculator

Sometimes we need to multiply decimal numbers. It seems to be horrible without calculator. But I think we could multiply such numbers by heart. The example

2.3 x 3.8 = ?

How to solve it by heart? Easily. Only to multiply lower limits and upper limits. What does it mean? The lower limits are numbers 2 and 3. The upper limits are numbers 3 and 4. Then

2 x 3 = 6   3 x 4 = 12

The result must lie between numbers 6 and 12. The result is not a number close to 6 or close to 12 or a number close to 7 or 11. I think the result we could expect is the number close to 9. I estimate the number around 8.5. Let´s go for the result by using of a calculator - **2.3 x 3.8 = 8.74**

I was wrong for 0.2. Let´s go for a next task:

1.1 x 8,9 = ?

1 x 8 = 8

2 x 9 = 18

I feel the result is close to 9. The right result is 9.79. I was wrong for a number around 0.8. It is quit a lot. Nearly 1.0

Next task again:

2.8 x 7,8 = ?

2 x 7 = 14

3 x 8 = 24

The result is estimated to 22. The right result is 21.84. Perfect! The mistake is under 0.2

What to say? If we train such experience for a long time then we could give quit good results easily. We have a slide rule in our heart. In situations as off-road conditions, exciting situations etc.