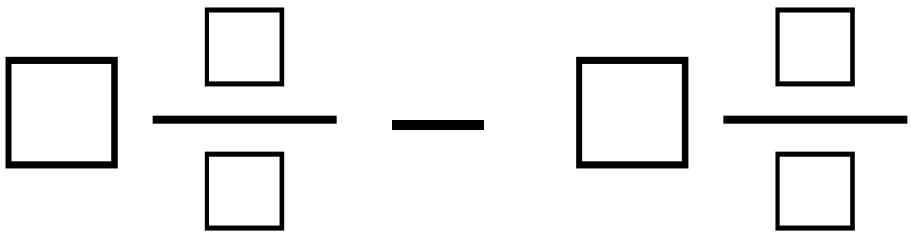
Puzzle of the Week
Fractions – 3

THE CHALLENGE: Use the numbers 1 to 9 at most once each to fill in the boxes. FInd two mixed numbers, whose fractional parts are proper fractions, that have as small a difference as possible.



1 2 3 4 5 6 7 8 9

EXPLORATION: How does your answer change if you allow the fractional parts to be improper?

Puzzle of the Week

Fractions – 3 – Notes

THE CHALLENGE & EXPLORATION:

If you allow the fractional parts to be improper, then the difference can be 0. For example, 8 1/2 – 7 6/4.

If they must be proper fractions, then make the first fractional part as small as possible and the second as large as possible.

There are only a few possibilities that have any reasonable chance.

3 1/9 – 2 7/8. For this, the difference is 1/9 + 1/8.

3 1/8 – 2 7/9. For this, the difference is 1/8 + 2/9

3 1/7 – 2 8/9. For this, the difference is 1/7 + 1/9

The first one is the best. Clearly, the 3 and 2 could be replaced by other consecutive numbers without changing the result.