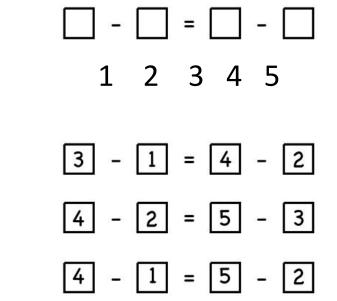
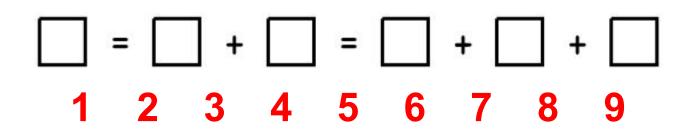
## Puzzle of the Week *Fill in the Blanks – 3*

Using the numbers from 1 to 5 at most once, this equation has three solutions.



THE CHALLENGE: Use each of the numbers from 1 to 9 at most once to fill in these blanks.



EXPLORATION: Explore other number ranges. What happens if you use 1 to 8 or 1 to 10?



The three solutions are:



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## Puzzle of the Week *Fill in the Blanks – 3 – Notes*

THE CHALLENGE: As with the other Fill in the Blanks puzzles, a child can just play with this and eventually arrive at the answers. That exploration involves a lot of good experiences, and there is no reason to avoid it.

To be more systematic, you want to look for a driver or focus that helps reduce the search. For this puzzle, that driver is the overall sum - we need to keep it small. The smallest sum for the three numbers is 1 + 2 + 3 = 6, but that leaves the other two numbers to add up to at least 4 + 5 = 9. To balance those two things, we can add them both up and divide by two - the smallest the single number on the left can be is (1 + 2 + 3 + 4 + 5) / 2 = 7 ½. So the sum will either be 8 or 9, which we can try out individually.

If it's 8, we have 1 solution:

- 8 = 1 + 7 does not work
- 8 = 2 + 6 = 1 + 3 + 4 works!
- 8 = 3 + 5 = does not work

For 9, we have 3 solutions:

- 9 = 1 + 8 = 2 + 3 + 4 works!
- 9 = 2 +7 = 1 + 3 + 5 works!
- 9 = 3 + 6 does not work
- 9 = 4 + 5 = 1 + 2 + 6 works!

EXPLORATION: We saw above that 1 to 8 gives one solution. The range from 1 to 10 will give us many more new solutions.

- 10 = 1 + 9 = 2 + 3 + 5 works!
- 10 = 2 + 8 = 1 + 2 + 7 = 1 + 3 + 6 = 1 + 4 + 5 3 ways!
- 10 = 3 + 7 = 1 + 4 + 5 = 2 + 3 + 5 2 ways!
- 10 = 4 + 6 = 1 + 2 + 7 = 2 + 3 + 5 2 ways!