

Puzzle of the Week

Fill in the Blanks – 1

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

$$\square - \square = \square - \square$$

1 2 3 4 5

The three solutions are:

$$\boxed{3} - \boxed{1} = \boxed{4} - \boxed{2}$$

$$\boxed{4} - \boxed{2} = \boxed{5} - \boxed{3}$$

$$\boxed{4} - \boxed{1} = \boxed{5} - \boxed{2}$$

THE CHALLENGE: Use the numbers from 1 to 6 at most once to fill in these blanks.

$$\square + \square = \square - \square$$

1 2 3 4 5 6

EXPLORATION: Explore other number ranges. What happens if you use 1 to 5, 1 to 7, or 1 to 8? How do things change if you use 0 to 6?

Puzzle of the Week

Fill in the Blanks – 1 – 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, the key observation is that the subtraction drives the solution.

Here are the solutions written out in order of the difference:

- $2 + 3 = 6 - 1$
- $1 + 3 = 6 - 2$
- $1 + 2 = 6 - 3$

EXPLORATION: There are no solutions for the range 1 to 5.

For 1 to 7, there are all the solutions above plus these:

- $2 + 4 = 7 - 1$
- $1 + 4 = 7 - 2$
- $1 + 2 = 7 - 4$

For 1 to 8, there are these additional solutions:

- $2 + 5 = 8 - 1$
- $3 + 4 = 8 - 1$
- $1 + 5 = 8 - 2$
- $1 + 4 = 8 - 3$
- $1 + 3 = 8 - 4$
- $1 + 2 = 8 - 5$

The range 0 to 6 adds a few additional solutions to the original set:

- $1 + 5 = 6 - 0$
- $2 + 4 = 6 - 0$
- $0 + 5 = 6 - 1$
- $0 + 4 = 6 - 2$
- $0 + 2 = 6 - 4$
- $0 + 1 = 6 - 5$