

MORE WITHOUT WORDS

Mathematical Puzzles to Confound and Delight



MWW 12: SOLUTION

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☆	☆	■	○	●	→	10
■	☆	■	■	☆	→	14
	↓		↓			
	7		4			

To see this ...

The second column says: $\blacksquare \star \star = 7$

The middle row says: $\blacksquare \star \star \circ \bullet = 10$

These two together imply: $\circ \bullet = 3$

From the first row this now means that: $\blacksquare \blacksquare \star = 5$

We now have these two pieces $\blacksquare \star \star = 7$ and $\blacksquare \blacksquare \star = 5$.
Together they imply that a star is worth two more than a square.

From $\blacksquare \blacksquare \star = 5$ we now see that $\blacksquare = 1$ (the star is worth a square plus two) and so $\star = 3$.

From $\blacksquare = 1$ and $\star = 3$ and $\circ \bullet = 3$, everything now falls into place!

Comment: This problem comes from the field of *linear algebra* in mathematics.

CHALLENGE: We never determined the value of an individual white circle or black circle. Is it possible to deduce their values in this problem?