

SHAPE ALGEBRA

Level 1

1.

$$\square + \square + \square + \square = 424$$

2.

$$\triangle + \triangle + \triangle + \triangle + 4\triangle = 864$$

3.

$$5\heartsuit + 1\heartsuit = \heartsuit + 50$$

Level 2

4.

$$\begin{aligned} 4\square + 4\square &= 16 \\ 16 \cdot (\square + \square) &= \end{aligned}$$

5.

$$\begin{aligned} \square + \triangle &= 12 \\ \square + \square + \square + \triangle + \triangle + \triangle + \triangle &= 48 \\ \square &= \\ \triangle &= \end{aligned}$$

6.

$$\begin{aligned} \square + 2\triangle &= 6 \\ 4\square + 10\triangle &= 36 \\ 20\square &= \end{aligned}$$

Level 3

7.

$$5 \diamond + 6 \clubsuit = 24$$

$$\diamond + \clubsuit = 12$$

$$\diamond =$$

$$\clubsuit =$$

8.

$$5\triangle + 2\square = 18$$

$$4\triangle + 3\square = 20$$

$$\triangle + \square =$$

9.

$$x + y + z = 12$$

$$2x + y = 14$$

$$2y + 2z = 12$$

$$x =$$

$$y =$$

$$z =$$

Level 4

10.

$$x + 2x + 3x + \cdots + 200x = 1$$

$$x =$$

11. *

$$\spadesuit + 2\spadesuit + 3\spadesuit + \cdots + n\spadesuit = n$$

$$\spadesuit =$$

For some positive whole number n