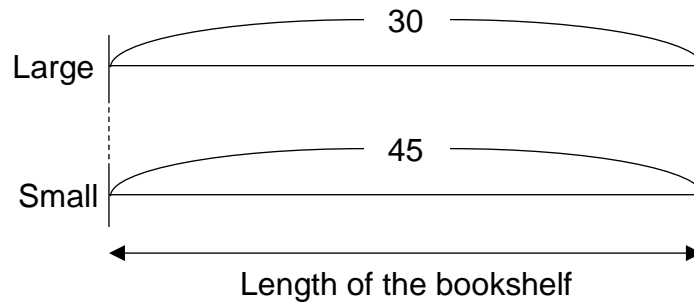


A Maths Question, PSLE 2021

A bookshelf can hold either 30 large books or 45 small books. Johnny stacked 3 large books and 23 small books in it. How many more large books can be stacked in the bookshelf at most?

<< Ratio >>

<Diagram>



<Writing>

Since 30 large books and 45 small books are in the same length, the ratio of one large book width to one small book width is

$$\begin{aligned} L : S &= 45 : 30 \\ &= \textcircled{3} : \textcircled{2} \end{aligned}$$

$$3 \times \textcircled{3} + 23 \times \textcircled{2} = \textcircled{55} \quad \rightarrow \text{Occupied by 3 large books and 23 small books}$$

$$30 \times \textcircled{3} = \textcircled{90} \quad \rightarrow \text{Length of the bookshelf}$$

$$\textcircled{90} - \textcircled{55} = \textcircled{35} \quad \rightarrow \text{Space left in the bookshelf}$$

$$\textcircled{35} \div \textcircled{3} = 11 \text{ R } 2$$

Hence 11 more large books can be stacked.

Answer 11