

## Long division ( with no remainders ) – How to: step by step

$$8544 \div 24$$

1. Write out the multiples

24, 48, 72, 96, 120, 144, 168, 192, 216, 240

2. Write out the question

$$24 \overline{) 8544}$$

3. Divide – how many 24s fit into 8?

$$24 \overline{) 8544} \begin{array}{r} 0 \\ \hline \end{array}$$

4. Divide – how many 24s fit into 85?

$$24 \overline{) 8544} \begin{array}{r} 03 \\ \hline \end{array}$$

5. Subtract – take away 3 lots of 24

$$\begin{array}{r} 24 \overline{) 8544} \begin{array}{r} 03 \\ \hline \end{array} \\ - 72 \\ \hline 13 \end{array}$$

6. Bring down the next digit

$$\begin{array}{r} 24 \overline{) 8544} \begin{array}{r} 03 \\ \hline \end{array} \\ - 72 \downarrow \\ \hline 134 \end{array}$$

*(Repeat steps 4-6 until there is nothing left to divide)*

7. Divide – how many 24s fit into 134?

$$\begin{array}{r} 035 \\ 24 \overline{) 8544} \\ \underline{-72} \phantom{0} \\ 134 \end{array}$$

8. Subtract – take away 5 lots of 24

$$\begin{array}{r} 035 \\ 24 \overline{) 8544} \\ \underline{-72} \phantom{0} \\ 134 \\ \underline{-120} \\ 14 \end{array}$$

9. Bring down the next digit

$$\begin{array}{r} 035 \\ 24 \overline{) 8544} \\ \underline{-72} \phantom{0} \\ 134 \\ \underline{-120} \\ 144 \end{array}$$

10. Divide – how many 24s fit into 144?

$$\begin{array}{r} 0356 \\ 24 \overline{) 8544} \\ \underline{-72} \phantom{0} \\ 134 \\ \underline{-120} \\ 144 \end{array}$$

11. Subtract – take away 6 lots of 24

$$\begin{array}{r} 24 \overline{) 8544} \\ \underline{-72} \phantom{0} \\ 134 \\ \underline{-120} \\ 144 \\ \underline{-144} \\ 0 \end{array}$$

0 (Keep going until you get to zero at the bottom)

ANSWER:  $8544 \div 24 = 356$