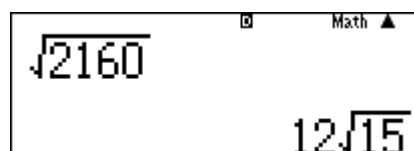


## Module 7: Examples of functions from geometry

### Part A – Square roots

Simplifying square roots is a built-in feature, but it helps to understand how the calculator achieves this.

$\sqrt{\phantom{x}}$  2 1 6 0 =

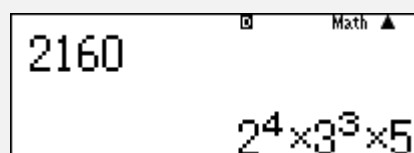


$$\sqrt{2160} = 12\sqrt{15}$$

First factor the number we would like to simplify.

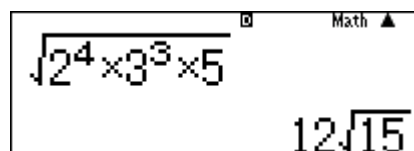
2 1 6 0 =

ALPHA (FACT)



$$2160 = 2^4 \times 3^3 \times 5$$

Enter the factored form into the calculator under the radical (square root symbol).

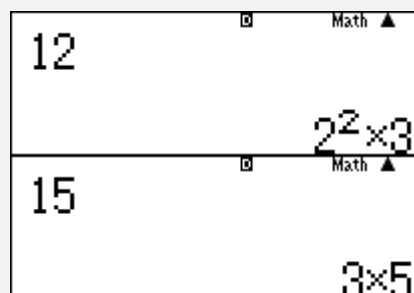


$$\sqrt{2^4 \times 3^3 \times 5} = 12\sqrt{15}$$

Factor the numbers that are outside the square root and then the ones inside the square root.

1 2 = SHIFT (FACT)

1 5 = SHIFT (FACT)



$$\begin{array}{l} 12 \\ 15 \end{array} \quad \begin{array}{l} 2^2 \times 3 \\ 3 \times 5 \end{array}$$

How does the answer relate to the original factored form of 2160?

$$\sqrt{2160}$$
$$\sqrt{2^4 \times 3^3 \times 5}$$
$$2^2 \times 3 \times \sqrt{3 \times 5}$$
$$2^2 \times 3 \times \sqrt{3 \times 5}$$