

## Answer on Question #83681 – Math – Calculus

### Question

Find a rational number between square root of 7 and square root of 11.

Find an irrational number between square root of 7 and square root of 11.

### Solution

A rational number between  $\sqrt{7}$  and  $\sqrt{11}$  is 3 because

$2.65 \approx \sqrt{7} < 3 < \sqrt{11} \approx 3.32$  (it is true because squares  $7 < 9 < 11$  will get the correct inequality, besides, we could choose any rational number in this interval, for example,  $\frac{20}{7}$ ).

An irrational number between  $\sqrt{7}$  and  $\sqrt{11}$  is  $\frac{\sqrt{7}+\sqrt{11}}{2}$  because

$\sqrt{7} < \frac{\sqrt{7}+\sqrt{11}}{2} < \sqrt{11}$  ( it is true because the inequality

$\sqrt{7} + \sqrt{7} < \sqrt{7} + \sqrt{11} < \sqrt{11} + \sqrt{11}$  holds true, besides, we could choose any number in this interval, for example,  $\sqrt{8} = 2\sqrt{2}$ ).

**Answer:** 3;  $\frac{\sqrt{7}+\sqrt{11}}{2}$ .