

Great Questions in Maths

Find all real solutions of the equation

$$\begin{aligned}(x^2 - 5x + 5)(x^2 - 11x + 30) &= 1 \\(x^2 - 7x + 11)(x^2 - 13x + 42) &= 1 \\(x^2 - 7x + 11)(x^2 - 1) &= 1\end{aligned}$$

$$3^{444} + 4^{333}$$

Multiple of 5?

Using ALL of

3, 3, 8, 8

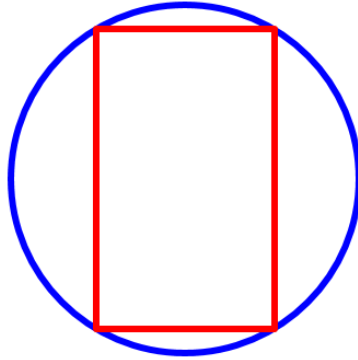
and ANY of

$\times \div + -$

Make the number 24.

Evaluate the sum

$$\frac{1}{\sqrt{1} + \sqrt{2}} + \frac{1}{\sqrt{2} + \sqrt{3}} + \frac{1}{\sqrt{3} + \sqrt{4}} + \dots + \frac{1}{\sqrt{15} + \sqrt{16}}$$



A circle of radius 6cm is inscribed by a rectangle of perimeter 28cm. Find the area of the rectangle.

$$n^2 + n + 41$$

Is this a prime number for all natural numbers n ?

$$p^2 - 1 = 24m$$

Take any prime number greater than 3, square it and subtract 1. Is the answer a multiple of 24? Why is that?

$$x^1, x^3, x^4, x^2, x^0.$$

Five numbers are arranged in order from least to greatest as above. Where does $-x^{-1}$ belong in the list?

$$x + \frac{1}{x} \geq 2 \quad \text{where } x \in R, x > 0$$

True or false?