

## Great Questions in Maths

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Find all real solutions of the equation

$$(x^2 - 7x + 11)(x^2 - 11x + 30) = 1$$

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

Multiple of 5?

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Using ALL of

3, 3, 8, 8

and ANY of

$\times \div + -$

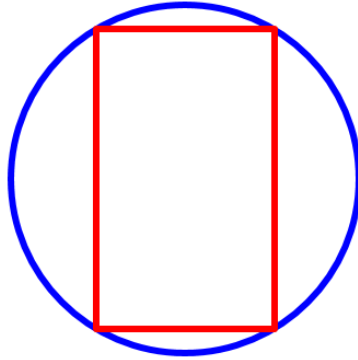
Make the number 24.

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Evaluate the sum

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

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

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$$x^2 + x + 41$$

Is this a prime number for all natural numbers  $n$ ?

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

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

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

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

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

True or false?