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Math_Questions_0042

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What was the first so-called invented number?

0

1

-1

$\frac{1}{2}$

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What is the difference between natural and counting numbers?

Counting numbers can be negative.

Counting numbers include 0.

Natural numbers include fractions.

There is no difference.

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The set of all possible numbers is called:
real numbers.

binary numbers.

complex numbers.

imaginary numbers.

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Which of the following is likely to be found in most non-simple-polynomial rational functions?

A horizontal asymptote

Vertical asymptotes

Roots

A defined value at $x = 0$

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What's the first thing you do to start graphing a rational function?

Try to simplify it

Find a real world application so the exercise is worth your effort

Make an ordered pairs table

Factor its numerator and denominator

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How many terms are there in the expression below?

$$3x^3 - 6x(4x + 2) + 12x$$

distribute gives... $3x^3 - 24x^2 - 12x + 12x = 3x^3 - 24x^2$

- 1
- 2
- 3
- 5

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Consider a rational function whose denominator is $-3x^2 + 4x + \frac{1}{4}$. What is the maximum number of vertical asymptotes it may have?

Set the denominator equal to zero and solve...

$$x = \frac{4 - \sqrt{19}}{6} \quad x = \frac{4 + \sqrt{19}}{6}$$

- 2
- 1
- 0

The denominator defines the function's zeroes, not its vertical asymptotes.

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Coefficients are to _____ as exponents are to _____?

factors, terms

multiplication, division

terms, factors

multiplication, factors

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All polynomials are functions whose term variable exponents are part of what number set?

Integer numbers

Natural numbers

Rational numbers

Whole numbers

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What is the likely effect of multiplying $f(x)$ by x , if $f(x) = x^2 + 2x - 8$?

The number of zeroes increases by one

The number of zeroes reduces by one

There is no effect on the function

There is no way to predict the potential impact

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Which of the following operations always comes before all the others?

Subtraction

Square root

Multiplication

Addition

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What is the correct numerical result to the expression below?

$$-2^2 + 12/3 - 1^2$$

$$= -4 + 4 - 1 = -1$$

7

4

9

None of the above

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What is the minimum order a polynomial is required to start in Quadrant III and end in Quadrant I?

3

-1

2

1

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What would be a suitable value for each of 10 tick marks on the vertical scale for the following function?

$$f(x) = 10x^2 \text{ for } -5 \leq x \leq 5$$

The maximum value is 250, the minimum is 0.

- 1
- 10
- 25
- 100

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What is the maximum number of zeroes this polynomial might have:

$$-3x^2 + 4x^5 + \frac{1}{2}x$$

- 2
- 3
- 5
- $\frac{1}{2}$

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What should we assume polynomials of order 3 or higher behave like between their zeroes?

Cubics

Parabolas

Linear functions

That we cannot adequately draw them without the aid of calculus

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For a rational function, $R(x)$, the horizontal axis is always labeled ____ and the vertical axis is always labeled _____.

- x, y
- $P(x)$, $Q(x)$
- x, $f(x)$
- x, $R(x)$

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How many factors are there in the second term of the expression below?

$$-6x^2 + 3(x + 2x) - 1$$

1

2

3

None, there is no second term

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Which numbering set is used to define fractions?

Whole numbers, except zero

Integers

Irrational numbers

None of the above

This is a really poor question. Fractions can be any number divided by any non-zero number. Even complex numbers! If they mean the denominator of a fraction, then usually we simplify that to a non-zero integer.

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Which of the following operations always comes after all the others?

Subtraction

Square root

Multiplication

Addition

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What is the maximum number of horizontal asymptotes possible for $R(x)$?

1

0

Same as the higher order of either $P(x)$ or $Q(x)$

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If $R(x)$ is the ratio of $P(x)$ to $Q(x)$, and $R(x)$ is a rational function, then $P(x)$ and $Q(x)$ must be?

Functions

Polynomials

Rational numbers

Only $P(x)$ needs to be a polynomial, $Q(x)$ can be any function

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What can be said about one of $R(x)$'s asymptotes if $O[P(x)] = O[Q(x)] + 1$?

There is a horizontal asymptote and a slant asymptote.

There is a slant asymptote.

There is a horizontal asymptote along the x-axis.

There is a vertical asymptote along the $R(x)$ -axis.

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Can a constant be considered a polynomial? Why?

No, because there is only a single term.

No, because there is no variable 'x'.

Yes, because $cx^0 = c(1) = c$ (a constant).

Yes, because $c^1 = c$.

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$-1^2 =$

1

-2

-1

None of the above