

For help with these problems
www.tutor-homework.com
Be sure to mention the filename:
Math_Questions_0042

www.tutor-homework.com (for tutoring, homework help, or help with online classes)

1 of 25

What was the first so-called invented number?

0

1

-1

$\frac{1}{2}$

2 of 25

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.

3 of 25

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

binary numbers.

complex numbers.

imaginary numbers.

4 of 25

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 $x = 0$

5 of 25

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

6 of 25

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

7 of 25

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.

8 of 25

Coefficients are to _____ as exponents are to _____?

factors, terms

multiplication, division

terms, factors

multiplication, factors

9 of 25

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

Integer numbers

Natural numbers

Rational numbers

Whole numbers

10 of 25

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

11 of 25

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

Subtraction

Square root

Multiplication

Addition

12 of 25

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

13 of 25

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

3

-1

2

1

14 of 25

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

15 of 25

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

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

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

16 of 25

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

17 of 25

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, $R(x)$

18 of 25

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

19 of 25

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.

20 of 25

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

Subtraction

Square root

Multiplication

Addition

21 of 25

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

1

0

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

32

22 of 25

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

23 of 25

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.

24 of 25

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 $c^1 = c$.

25 of 25

$-1^2 =$

1

-2

-1

None of the above