

Home > Maths > Algebraic Division 2ii

Algebraic Division 2ii



Part A Quotient and Remainder

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Find the quotient and the remainder when $3x^3 - 2x^2 + x + 7$ is divided by $x^2 - 2x + 5$.

Give the quotient.

The following symbols may be useful: x

Give the remainder.

The following symbols may be useful: x

Part B Value of a and b

Hence, or otherwise, determine the values of the constants a and b such that, when $3x^3 - 2x^2 + ax + b$ is divided by $x^2 - 2x + 5$, there is no remainder.

Give the value of a.

The following symbols may be useful: a

Give the value of b.

The following symbols may be useful: b

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Home > Maths > Functions: Graphs and Inverse Functions 3ii

Functions: Graphs and Inverse Functions 3ii



The function f(x) is defined by

$$f(x) = 1 + \sqrt{x} \text{ for } x = 0.$$

Part A Domain and Range

~

What is the domain of the inverse function $f^{-1}(x)$? Write your answer in the form of an inequality.

The following symbols may be useful: <, <=, >, >=, f, x, y

What is the range of the inverse function $f^{-1}(x)$? Write your answer in the form of an inequality.

The following symbols may be useful: <, <=, >, >=, f, x, y

Part B $f^{-1}(x)$

~

Find an expression for $f^{-1}(x)$.

The following symbols may be useful: f, x, y

Part C
$$f(x) = f^{-1}(x)$$

~

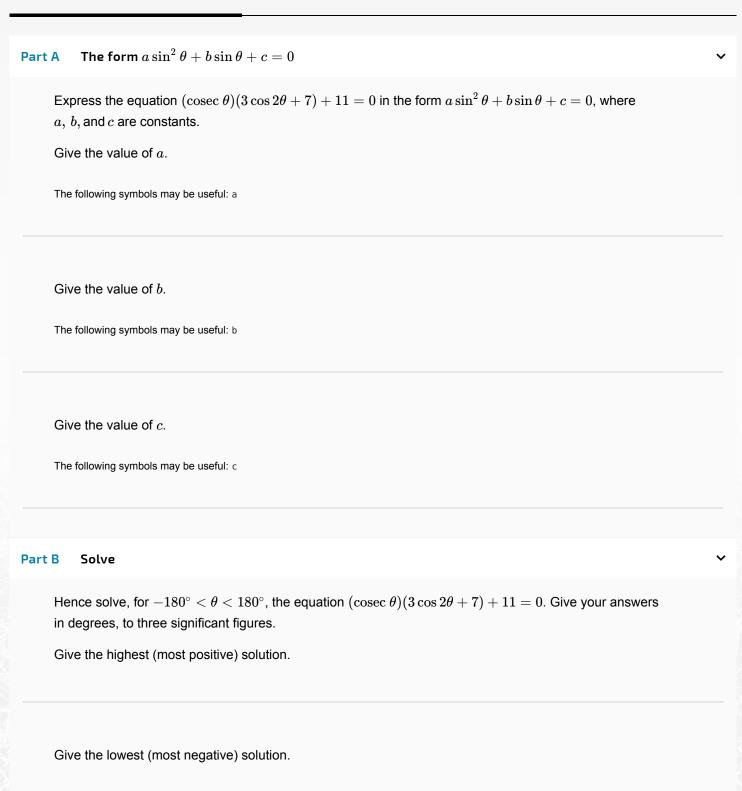
Find the *x*-value that is the solution to the equation $f(x) = f^{-1}(x)$ to four significant figures.

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Home > Maths > Trigonometry: Double Angles 1ii

Trigonometry: Double Angles 1ii







<u>Home</u> > Maths > Trigonometry: Combined Angles 4ii

Trigonometry: Combined Angles 4ii



Part A Combined A	ngles			~
Express	in the form	, where	and .	
Give the value of				
The following symbols may be useful: R				
Give the value of to three significant figures.				
Part B Solve				~
Hence solve, for significant figures		n	, giving your answers in degrees to three	
Give the smallest	solution.			
Give the largest solution.				
Part C Maximum Va	alue			~
Hence find the greatest possible value of				
as the angles and vary.				

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