Year 12 Definitions

Dr Oliver

Revision Part 1

Discriminant

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$$ax^2 + bx + c = 0,$$

then the discriminant is

$$b^2 - 4ac.$$

The *discriminant* reveals what type of roots the equation has:

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$b^2 - 4ac > 0$	
$b^2 - 4ac = 0$	
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$b^2 - 4ac < 0$	two complex conjugate roots

Exact values

	0°	30°	45°	60°	90°
sin					
cos					
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Exact values

	0°	30°	45°	60°	90°
sin	0	$\frac{1}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{\sqrt{3}}{2}$	1
cos					
tan					

Exact values

	0°	30°	45°	60°	90°
sin	0	$\frac{1}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{\sqrt{3}}{2}$	1
cos	1				
tan					

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	0°	30°	45°	60°	90°
sin	0	$\frac{1}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{\sqrt{3}}{2}$	1
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Squares and cubes

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Expressions and equations

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An equation consists of two expressions connected by an equals sign. It can only be true or false. An expression is never true or false.

Given the graph of $y = \mathrm{f}(x)$, how can you draw the graph of $y = \mathrm{f}(2x)$?

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Reflect any part of the graph that is below the x-axis in the x-axis and leave the rest of the graph alone.

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Given the graph of $y = \mathrm{f}(x)$, how can you draw the graph of $y = \mathrm{f}(|x|)$?
Discard the part of the graph to the left of the y-axis and reflect the rest of the graph in the y-axis.