Higher Mathematics

Knox Academy
NUMERACY AND COMPUTING FACULTY

the straight line

			other notes		some past exam paper questions
Using m=tanθ to calculate a gradient or angle	Calculating the gradient when given an angle	https://youtu.be/3f7jB7f6D08	Link	Link	2018 Paper 1 Q8 · 2005 Paper 1 Q1 · 2004 Paper 2 Q1 · 2000 Paper 1 Q3
	Calculating an angle when given the gradient	https://youtu.be/nn6WugLRLbY			
	Calculating the gradient/angle – exact values	https://youtu.be/gM3D6xLWq0A			
Finding the equation of a line parallel to and a line perpendicular to a given line	Parallel gradients	https://youtu.be/JjSaSHSug30			2019 Paper 1 Q7 · 2017 Paper 1 Q11 · 2016 Paper 1 Q1 · Specimen Paper 1 Q5 · 2007 Paper 1 Q1 · 2006 Paper 2 Q1 · 2003 Paper 1 Q1 · 2001 Paper 1 Q1
	Perpendicular gradients	https://youtu.be/FhD8ODIxGos	Link	Link	
	Gradients with exact values	https://youtu.be/bx-BB07jI_I			
Determining whether or not points are collinear	Collinearity		Link	Collinearity	2015 Paper 1 Q9
Using properties of medians, altitudes and perpendicular bisectors in problems involving the equation of a line and intersection of lines	Equation of the median	https://youtu.be/l8jJTgY5fA	Link	Link	2018 Paper 1 Q1 · 2017 Paper 1 Q7 · 2016 Paper 2 Q1 · Specimen Paper 1 Q9 · 1995 Paper 1 Q5 · 1999 Paper 2 Q1 · 1998 Paper 1 Q1 · 1988 Paper 1 Q1
	Equation of the altitude	https://youtu.be/UTm0SJa6of4	Link	Link	
	Equation of a perpendicular bisector	https://youtu.be/k1jMcDscQA0	Link	Link	
	Point of intersection between 2 lines – positive 'x'	https://youtu.be/XJyEmEuhrI4	Link	Link	2019 Paper 2 Q1 · 2018 Paper 2 Q5 · 2017 Paper 2 Q1 · 2015 Paper 2 Q1 · Exemplar Paper 1 Q6 · 2014 Paper 2 Q1 · 2013 Paper 2 Q2 · 2012 Paper 2 Q2
	Point of intersection between 2 lines – negative 'x'	https://youtu.be/vDV0av6jiSos			2011 Paper 1 Q21 · 2010 Paper 1 Q21 · 2009 Paper 1 Q21 · 2008 Paper 2 Q1 · Specimen Paper 1 Q1 · 2006 Paper 1 Q1 · 2004 Paper 1 Q1 · 2002 Paper 2 Q1
	Points of intersection – with fractions	https://youtu.be/IKSFt_74kvU			1999 Paper 1 Q2 · 1996 Paper 2 Q2 · 1992 Paper 1 Q2

Graphs of Functions

			other notes		some past exam paper questions
Identifying or sketching a function after a transformation of the form kf(x), f(kx), f(x+k), f(x)+k or a combination of these	Graphs of functions – changing the y coords	https://youtu.be/6qVXUzyd-k0	Link	Link	
	Graphs of functions – changing the x coords	https://youtu.be/AlNdsT9ZPio	Link		
	Graphs of functions – changing both of them	https://youtu.be/EdiJtkoPTPs	Link		2019 Paper 1 Q10 · 2017 Paper 1 Q15 · 2015 Paper 1 Q20 · Exemplar Paper 1 Q8 · 2013 Paper 1 Q11 · 2012 Paper 1 Q11 · 2011 Paper 1 Q3 · 2010 Paper 1 Q20 · 2009 Paper 1 Q23 · 2008 Paper 1 Q8 · 2004 Paper 1 Q4 · Specimen 2 Paper 1 Q14 · Specimen 1 Paper 1 Q6
	Trig graphs - finding the values of a & b	https://youtu.be/LemAKXMpr3I			2015 Paper 1 Q4 · 2013 Paper 1 Q4 · 2012 Paper 1 Q9 · 2010 Paper 1 Q4 · Specimen 1 Paper 1 Q17
	Trig graphs - Finding the values of a, b & c	https://youtu.be/8ebO8yo0rH8			
	Sketching graphs of trickier trig functions	https://youtu.be/tTi9TV7MaUE			

Trigonometry (1)

			other notes		some past exam paper questions
Application of the addition or double angle formulae	Double angle formula – sin2x	https://youtu.be/dDcStd_iU7w		Link	2019 Paper 1 Q13 · 2018 Paper 1 Q13 · 2016 Paper 1 Q13 · 2015 Paper 1 Q10 · Specimen Paper 1 Q6 · 2007 Paper 2 Q2 · 2005 Paper 2 Q2 · 2003 Paper 1 Q10 · 2000 Paper 1 Q1 · 1999 Paper 1 Q1 · 1999 Paper 1 Q12
	Double angle formula – cos2x	https://youtu.be/ARpNuiPajyg			
	Addition formulae – for sine and cosine	https://youtu.be/DsbI_nCWIIA	Link	Link	

Logs and Exponentials

			other notes		some past exam paper questions
Using the laws of logarithms and exponents	Evaluating logarithmic expressions	https://youtu.be/TL2_ISu9Rtw	Link	Link	2018 Paper 1 Q6 · 2015 Paper 1 Q6 · 2003 Paper 1 Q12 · 2000 Paper 1 Q9
	Logarithmic expressions – combining logs	https://youtu.be/1xntsgXONIU	Link		
	Logarithmic expressions – moving stuff 'up/down'	https://youtu.be/L33XGohVAIA			
Solving logarithmic and exponential equations	Solving simple logarithmic equations	https://youtu.be/4-uZH0bsm-s	Link	Link	2019 Paper 1 Q14 · 2018 Paper 1 Q11 · 2017 Paper 1 Q12 · 2016 Paper 1 Q14 · 2013 Paper 2 Q5 · 2009 Paper 2 Q3 · 2008 Paper 1 Q23 · Specimen Paper 1 Q22
	Solving logarithmic equations	https://youtu.be/sUrr2E1_D8o			2007 Paper 2 Q8 · 2005 Paper 2 Q7 · 2004 Paper 1 Q9 · 2002 Paper 2 Q7 · 2001 Paper 1 Q8
	Solving logarithmic equations with brackets	https://youtu.be/gMAeHXachig			

Differentiation (1)

			other notes	some past exam paper questions
Differentiating an algebraic function which is, or can be simplified to, an expression in powers of x	Basic differentiation	https://youtu.be/RwEFjJO_864	Playlist #1-6	2016 Paper 1 Q2 · 2015 Paper 1 Q7 · 2003 Paper 1 Q5 · 2000 Paper 1 Q1 · 1999 Paper 1 Q5 · 1996 Paper 1 Q5
	Differentiation – with fractions and indices	https://youtu.be/YUUIgWpb20c		
	Harder differentiation	https://youtu.be/RJe9tJyxWZw		
October mid-term assessment				
Determining the equation of a tangent to a curve at a given point by differentiation	Finding the derivative at a particular point	https://youtu.be/eSEmbl7wP2k	Link	2017 Paper 1 Q8
	Harder substitution	https://youtu.be/0DUy0nU1iXU		
	Rates of change	https://youtu.be/Bg6lLSL_gVY		2015 Paper 1 Q1 · 2010 Paper 1 Q17 · 2009 Paper 1 Q20 · 2012 Paper 1 Q8
	Calculating the gradient of a tangent to curve	https://youtu.be/Rrm2Qm17YU	Link	2018 Paper 1 Q7 · 2015 Paper 1 Q2 · Exemplar Paper 1 Q1 · 2014 Paper 2 Q4 · 2008 Paper 1 Q22 · Specimen 1 Paper 2 Q4 · 2007 Paper 2 Q5 · 2006 Paper 2 Q3
	The equation of a tangent to curve	https://youtu.be/iiDiPoZqk2g		2012 Paper 1 Q2 · 2013 Paper 1 Q2 · 2011 Paper 1 Q4 · 2009 Paper 1 Q4 · 1999 Paper 1 Q9
	Finding a point when given the gradient	https://youtu.be/UW8hdaMRyOs		

Quadratics

			other notes		some past exam paper questions
Given the nature of the roots of an equation, use the discriminant to find an unknown	The discriminant - solving for equal roots	https://youtu.be/Bx_aveqBnnM	Link	Link	2019 Paper 1 Q2 · 2017 Paper 1 Q4 · 2016 Paper 2 Q2 · Exemplar Paper 2 Q3 · Specimen Paper 1 Q4 · 2014 Paper 2 Q3 · 2012 Paper 2 Q1 · 2007 Paper 1 Q4
	Solving for real or no real roots	https://youtu.be/WQJNfkvOOvg			2006 Paper 2 Q2 · 2001 Paper 1 Q2
	Solving for equal, real or no real roots	https://youtu.be/nuoepbTGKQ8			
Finding the coordinates of the point(s) of the intersection of a straight line and a curve or of two curves	Intersection of line & curve – 2 points of contact	https://youtu.be/OKNj96JvA68	Link	Link	Specimen Paper 1 Q2
	Intersection of line & curve – 1 point of contact	https://youtu.be/cN_dNJz8z_k			
	Intersection of line & curve – no points of contact	https://youtu.be/cMAPgbNfpSA			
Completing the square in a quadratic expression where the coefficient of x2 is non-unitary	Completing the square (non-unitary x^2)	https://youtu.be/Cfurz_Vd2DA	Link	Link	2019 Paper 2 Q7 · 2018 Paper 2 Q4 · 2017 Paper 2 Q4 · 2016 Paper 1 Q12 · 2015 Paper 2 Q2 · Specimen Paper 1 Q8 · 2013 Paper 1 Q21 · 2002 Paper 1 Q7
	Completing the square (negative non-unitary x^2)	https://youtu.be/_LOKwXwPTbY			2001 Paper 1 Q4
	Maximum and minimum values	https://youtu.be/7a3YHrsy4P4			
Determine the equation of a Parabola	Writing the equation of a quadratic function with a common factor	https://youtu.be/qCZC-goBWeY	Link		
	Writing the equation of a quadratic function in trinomial form	https://youtu.be/jwS2qtLNckRo			
	Writing the equation of a cubic function	https://youtu.be/z_M7kryUa64			
Solve quadratic inequalities	Solving quadratic inequalities - common factor	https://youtu.be/wG3qj1bx1XE	Link	Link	2018 Paper 2 Q10 · 2015 Paper 1 Q8 · 2013 Paper 1 Q19 · 2012 Paper 1 Q19 · 2011 Paper 1 Q18 · 2010 Paper 1 Q18 · 2009 Paper 1 Q19
	Quadratic inequalities - unitary x^2 trinomials	https://youtu.be/YfJtfPc0o9k			
	Quadratic inequalities - non-unitary x^2 trinomials	https://youtu.be/XFWiS-1ZSxo			

Differentiation (2)

			other notes	some past exam paper questions
Differentiating ksin(x), kcos(x)	Further differentiation - with brackets	https://youtu.be/723N7sXY9Ito		2019 Paper 1 Q6 · 2016 Paper 2 Q10a · 2010 Paper 2 Q6a · 2007 Paper 1 Q10
Differentiating a composite function using the chain rule	Further differentiation - with trigonometry	https://youtu.be/frm-IXPTB1A		2017 Paper 2 Q11 · 2016 Paper 2 Q11b · Specimen Paper 1 Q10 · 2006 Paper 2 Q9 · 2003 Paper 2 Q6 · 1999 Paper 2 Q10
	Further differentiation - with brackets & trig	https://youtu.be/ZPCYVEDiqfA		2005 Paper 1 Q5

Functions

			other notes		some past exam paper questions
Determining a composite function given f(x) and g(x), where f(x) and g(x) can be trigonometric, logarithmic, exponential or algebraic functions — knowledge and use of the terms domain and range is expected	Restrictions on the domain – for fractions	https://youtu.be/aBIphzgHWgM	Link		2015 Paper 2 Q2 · 2005 Paper 1 Q4 · 2003 Paper 1 Q9
	Restrictions on the domain – for square roots	https://youtu.be/_rFNTwGvhpk			
	Domain and range	https://youtu.be/W7IJyzylAAA			
	Composite functions – 'f(g(number))'	https://youtu.be/Vll4dlVN8XE	Link	Link	2019 Paper 1 Q12 · 2017 Paper 1 Q1 · 2016 Paper 1 Q12 · Specimen Paper 1 Q8 · 2014 Paper 2 Q3 · 2012 Paper 2 Q1 · 2009 Paper 2 Q2 · 2007 Paper 1 Q3
	Composite functions – 'f(g(x))'	https://youtu.be/yCxP4mpbGQM			2006 Paper 1 Q3
	Composite functions – working backwards	https://youtu.be/RJBS2FahCz8			
Determining the inverse of functions	Calculating inverse functions	https://youtu.be/wQs-j223zaQ	Link	Link	2019 Paper 2 Q8 · 2018 Paper 1 Q2 · 2017 Paper 1 Q6 · 2016 Paper 1 Q6 · 2015 Paper 1 Q5 · Exemplar Paper 1 Q11
Sketching the inverse of a logarithmic or an exponential function	Graphs of exponential functions	https://youtu.be/cBZJy39htIE	Link		2016 Paper 1 Q10 · 2015 Paper 1 Q13 · 2010 Paper 1 Q19 · 2009 Paper 1 Q10 · 2005 Paper 1 Q7
	Graphs of logarithmic functions	https://youtu.be/GJB4LlomwnU			
	Inverse graphs of exp & log functions	https://youtu.be/PFh5q7TRp78	Link		

Polynomials

			other notes		some past exam paper questions						
Factorising a cubic or quartic polynomial expression	Factorising cubic polynomials when given factor	https://youtu.be/HM5dHRe-9jg	Link	Link	2019 Paper 2 Q10	2018 Paper 2 Q7	2017 Paper 2 Q2	2016 Paper 2 Q3(a)	2015 Paper 1 Q3	Specimen Paper 1 Q7	2006 Paper 1 Q9	2004 Paper 1 Q2
	Factorising cubic polynomials when not given a factor and missing terms	https://youtu.be/X6de8pNIHLI			2003 Paper 2 Q1						
	Factorising polynomials of degree 4	https://youtu.be/GQEpLPPJD8k									
Solving a cubic or quartic polynomial equation	Solving a cubic or quartic polynomial equation		Link	Link							
	Prelim assessment										

Polynomials continued

			other notes		some past exam paper questions						
Finding unknown coefficients of a polynomial equation	Finding 'k' in simple expressions	https://youtu.be/FpyBpS2yZ1A			2001 Paper 2 Q1						
	Finding 'c' in trickier expressions	https://youtu.be/QMy4Y4OlhJI									
	Finding the values of 'a' and 'b' in polynomials	https://youtu.be/cXD1aJZEzAA	Link		Exemplar Paper 1 Q5	2014 Paper 1 Q22					
Finding the coordinates of the point(s) of the intersection of a straight line and a curve or of two curves	Points of intersection with curve & x-axis	https://youtu.be/go34hPkswSc									
	Intersection between curve & straight line	https://youtu.be/zSdl4ec_x9Q									
	Points of intersection with cubic & quadratic	https://youtu.be/wvWMzlbzDI4	Link		Specimen Paper 1 Q23						
Determine the function of a polynomial			Link								

Differentiation (3)

			other notes		some past exam paper questions						
Determining where a function is strictly increasing/decreasing	Increasing/decreasing functions	https://youtu.be/QAulm3YI6IY	Link	Link	2018 Paper 2 Q3	1995 Paper 1 Q10	2017 Paper 2 Q4	2019 Paper 2 Q7			
	Stationary functions	https://youtu.be/zUAGKkDvrGg	Link	Link	1996 Paper 1 Q16	1990 Paper 1 Q16					
Sketching the graph of an algebraic function by determining stationary points and their nature as well as intersections with the axes and behaviour of f(x) for large positive and negative values of x	The coordinates of stationary points	https://youtu.be/SCWYS89sU08			2019 Paper 1 Q1						
	Determining the nature of stationary points	https://youtu.be/AJWTWkeouRA			2016 Paper 1 Q9	2009 Paper 2 Q1	2011 Paper 1 Q22				
	Curve sketching	https://youtu.be/Es2DBTwN_q8	Link	Link	2014 Paper 1 Q21	2007 Paper 1 Q9	2008 Paper 1 Q21	2013 Paper 2 Q3	2018 Paper 1 Q15		

Trigonometry (2)

			other notes		some past exam paper questions						
Solving trigonometric equations in degrees or radians including those involving the wave function or trigonometric formulae or identities, in a given interval	Solving "type 1" trig equations	https://youtu.be/SccUbu5wBvI	Link	Link	2011 Paper 1 Q10	2008 Paper 1 Q6	2015 Paper 1 Q10	2009 Paper 1 Q11			
	Solving "type 2" trig equations	https://youtu.be/Sf_PDPUhD3s			2006 Paper 1 Q7	2007 Paper 1 Q6	2013 Paper 2 Q8	2019 Paper 1 Q15			
	Solving "type 3" trig equations	https://youtu.be/941dV646yYE	Link	Link	2008 Paper 2 Q5	2017 Paper 2 Q6	2010 Paper 2 Q4	2014 Paper 2 Q6	2018 Paper 2 Q6		
Application of trigonometric identities	Trig identities with sin2x	https://youtu.be/ZH1u8gEes2A									
	Trig identities with cos2x	https://youtu.be/-X8u5qoJhh0									
	Trig identities with more than 1 identity	https://youtu.be/ghYt2eiW_Uc	Link		2015 Paper 2 Q7b	2016 Paper 2 Q11a	2017 Paper 2 Q11a				

Logs and Exponentials (2)

			other notes		some past exam paper questions						
Model mathematically situations involving the logarithmic or exponential function	Solving exponential equations	https://youtu.be/ChVvOTAJRkg									
	Evaluating exponential equations	https://youtu.be/cGy_7WoetVE									
	Finding the 'half-life'	https://youtu.be/4RFOc1zn2EA	Link	Link	2004 Paper 2 Q10	1992 Paper 2 Q4	2016 Paper 2 Q6	1989 Paper 1 Q20	2005 Paper 2 Q9	2018 Paper 2 Q11	2001 Paper 2 Q9	2019 Paper 2 Q9
Use a straight line graph to confirm relationships of the form y = ax ^ b, y = ab ^ x	Experimental data - of the form y = ax	https://youtu.be/xP88Km3Nbzw									
Solve for a and b equations of the following forms, given two pairs of corresponding values of x and y log y = b log x + log a, y = ax ^ b log y = x log b + log a, y = ab ^ x	Experimental data - of the form y = kax	https://youtu.be/8e_FvMjfEAE	Link	Link	2019 Paper 2 Q12	2014 Paper 1 Q24					
	Experimental data - of the form y = kxn	https://youtu.be/Md_Jo7Kj320	Link		2017 Paper 2 Q9	2002 Paper 1 Q11	1990 Paper 1 Q14				

Integration (1)

		other notes		some past exam paper questions						
	Indefinite integrals – for basic integration https://youtu.be/hthGnsriyN4			2013 Paper 1 Q7	2015 Paper 1 Q7	2011 Paper 1 Q16				
	Indefinite integrals - fractions & indices https://youtu.be/9wFSdMe9qr0	Link	Link	2011 Paper 1 Q11	2019 Paper 2 Q2					
Integrating an algebraic function which is, or can be, simplified to an expression of powers of x	Indefinite integrals - harder integration! https://youtu.be/2kSmv4s4HCk	Link	Link	2005 Paper 2 Q1	2001 Paper 2 Q6	1999 Paper 1 Q20				
	Indefinite integrals - basic integration https://youtu.be/oLk-jIAtW48									
	Indefinite integrals - standard integration https://youtu.be/m16qnZoirB0									
	Indefinite integrals - working backwards https://youtu.be/QAGG07Hn9bs									
Solving differential equations of the form dy/dx = f(x)	Differential equations https://youtu.be/i8cFKwTKuM	Link	Link	2015 Paper 1 Q11	2018 Paper 1 Q10	2019 Paper 2 Q13	2016 Paper 2 Q9	2015 Paper 1 Q15		
Finding the area between a curve and the x-axis	The area between a curve and the x-axis https://youtu.be/CRSjOetFBKc	Link	Link	2018 Paper 2 Q1	2012 Paper 1 Q21	2016 Paper 2 Q3	2007 Paper 1 Q8			

the Circle

		other notes		some past exam paper questions						
	The equation $(x - a)^2 + (y - b)^2 = r^2$ https://youtu.be/vMCD5KzATE	Link	Link							
Determining and using the equation of a circle	The equation $x^2 + y^2 - 2gx - 2fy + c = 0$ https://youtu.be/xmZ51Ld9ka0	Link	Link	2019 Paper 1 Q3	2007 Paper 1 Q5	2015 Paper 1 Q14	2014 Paper 2 Q8	2019 Paper 1 Q16		
	Equation when given two end-points of a diameter https://youtu.be/qzY1moKasNg			2016 Paper 1 Q4						
	The gradient of a tangent to the circle https://youtu.be/6CPmGYS-V68									
Using properties of tangency in the solution of a problem	The equation of a tangent to the circle https://youtu.be/VDM3sne_oq0	Link	Link							
	Equation when given the other end point https://youtu.be/mySlnqnLJn8I			2018 Paper 1 Q4	1991 Paper 1 Q8	1988 Paper 1 Q2	2017 Paper 1 Q2	1996 Paper 1 Q4	1998 Paper 1 Q4	2002 Paper 1 Q1	2006 Paper 1 Q2
				2019 Paper 2 Q15	2015 Paper 1 Q11					
	Intersection of line & circle – 2 points of contact https://youtu.be/voyfyQTFDR8	Link		2017 Paper 2 Q3	2016 Paper 1 Q8	2004 Paper 2 Q8	2003 Paper 2 Q4	2013 Paper 1 Q22	2012 Paper 2 Q2	2010 Paper 2 Q3
	Intersection of line & circle – 1 point of contact https://youtu.be/X-UPZfpqhn8									
	Intersection of line & circle – 0 points of contact https://youtu.be/drC6oz3L3Sk									
Determining the intersection of circles or a line and a circle										
	Intersecting circles – 2 points of contact https://youtu.be/_xoZWZ48GOw	Link	Link	2008 Paper 2 Q4	2017 Paper 2 Q10	2018 Paper 2 Q12				
	Intersecting circles – 1 point of contact https://youtu.be/tOAXPV948G8			2015 Paper 2 Q5						
	Intersecting circles – no points of contact https://youtu.be/hmkebfIVMI0			2016 Paper 2 Q4						

March mid-term assessment

Integration (2)

		other notes		some past exam paper questions						
Finding the area between a straight line and a curve or two curves	The area between a curve and a line https://youtu.be/AEjhGdrCnkI			2011 Paper 2 Q4	2013 Paper 2 Q4					
	The area between two curves https://youtu.be/ScpM1_HcOVg	Link	Link	2010 Paper 1 Q14	2019 Paper 1 Q8	2005 Paper 2 Q5	2002 Paper 2 Q5	2017 Paper 1 Q10	2015 Paper 2 Q4	
Integrating functions of the form n not equal to f(x) = (x + q)^n	Further integration - with brackets https://youtu.be/ppbmqputmsI	Link	Link							
Integrating functions of the form f(x) = pcos(qx+r) and f(x) = psin(qx+r)	Further integration - with trigonometry https://youtu.be/pBIdI1IfvyM	Link	Link (Example 15)	2019 Paper 1 Q17						
Calculating definite integrals of functions with limits which are integers, radians, surds or fractions	Definite integrals with radian limits https://youtu.be/bV_c4kshsOs			2015 Paper 1 Q19	2015 Paper 1 Q12					

Wave Function

		other notes		some past exam paper questions						
	The wave function - 1st quadrant angles https://youtu.be/cpa6ps0u_Ok	Link	Link							
Convert a cos x + b sin x to k cos (x ± a) or k sin(x ± a), k >0	2nd, 3rd & 4th quadrant angles https://youtu.be/bY1_tvSA_dw	Link	Link	2018 Paper 2 Q8	2017 Paper 1 Q14					
	The wave function - angles in radians https://youtu.be/4alK6FJaa4c									
Solving trigonometric equations in degrees or radians including those involving the wave function or trigonometric formulae or identities, in a given interval	Part (b) - Solving 'type 1' trig equations https://youtu.be/r9WfUdUDnQw	Link (Example 27-28)		2019 Paper 2 Q6	2016 Paper 2 Q8					
	Part (b) - Maximum and minimum values https://youtu.be/PZkwZfMZLr8	Link								

Differentiation (4)

			other notes		some past exam paper questions
Determining greatest and least in a closed interval	Max & min values within a closed interval	https://youtu.be/miZDSlqcDEA	Link	Link	2017 Paper 2 Q7
Sketch f'(x) given the graph of y = f(x)	The graph of the derived function	https://youtu.be/zQSs8Vpsx9w	Link	Link	2004 Paper 1 Q7 · 2019 Paper 2 Q5 · 1998 Paper 1 Q22 · 2002 Paper 1 Q6 · 2001 Paper 1 Q9 · 1992 Paper 1 Q19
Determining the optimal solution for a given problem	Optimisation	https://youtu.be/mJTzgro1z-M	Link	Link (Example 26-28)	2001 Paper 1 Q6 · 2018 Paper 2 Q9 · 2016 Paper 2Q7 · 2013 Paper 2 Q7 · 2003 Paper 2 Q8 · 2004 Paper 2 Q9 · 2019 Paper 2 Q11 · 2008 Paper 2 Q6