

AUTOGRAPH MASTERCLASS WORKSHOP

K.S. 3-4 Topics:

www.tsm-resources.com/master.html

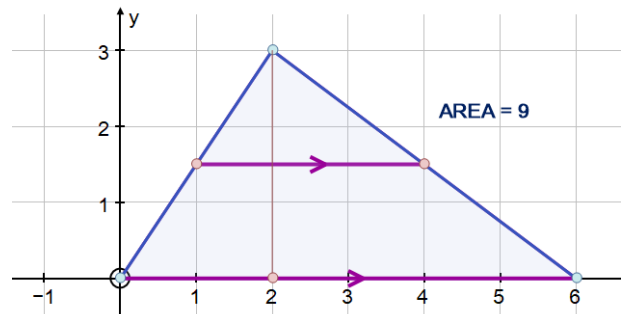


1. GEOMETRY and MEASURES

Parallel and perpendicular lines:

PARALLEL TEST

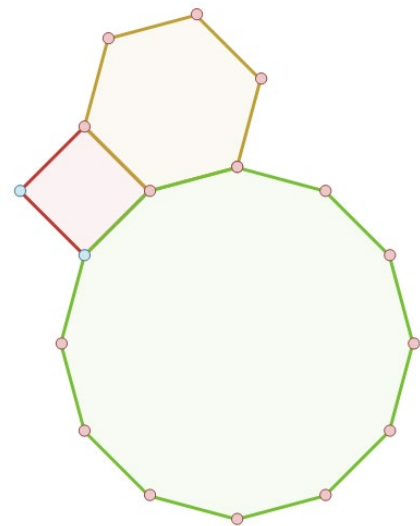
Shortest distance



REGULAR POLYGONS

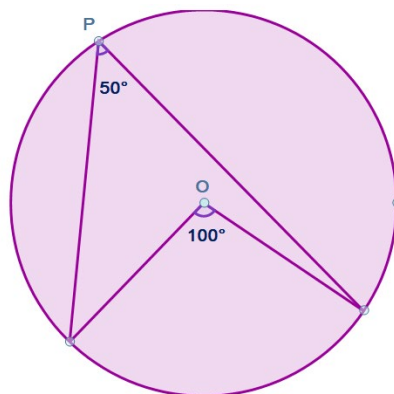
Triangle, Square, rectangle, parallelogram

Trapezium, kite, rhombus



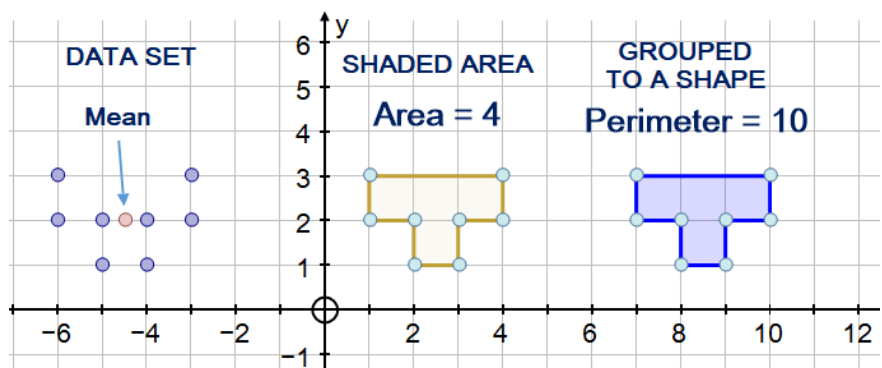
THE CIRCLE:

properties and theorems



WHAT TO DO WITH A

COLLECTION OF POINTS:



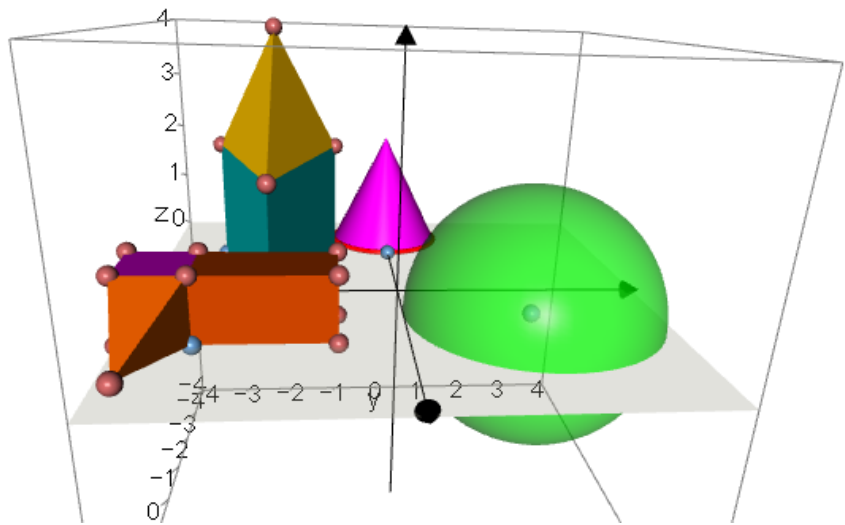
TRANSFORMATIONS:

rotation, reflection,
translation, enlargement
Fractional and
negative scale factors
Invariance

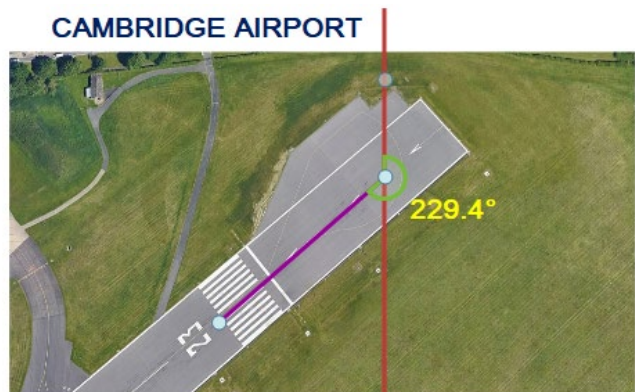


3D SHAPES

Cube, cuboid,
prisms, cylinders,
pyramids, cones,
spheres

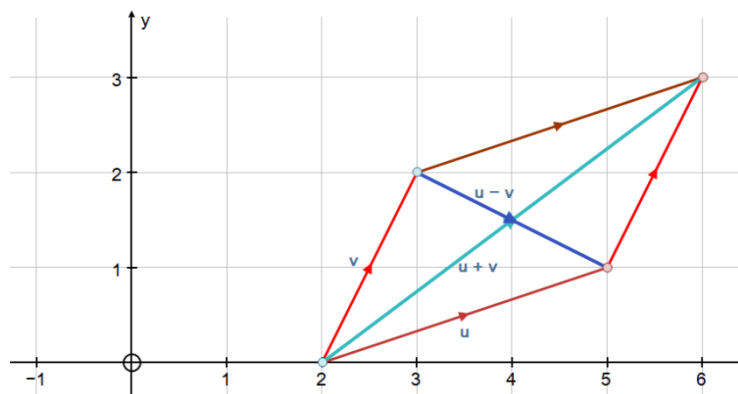


MAPS AND BEARINGS



VECTORS:

addition and subtraction



2. NUMBER

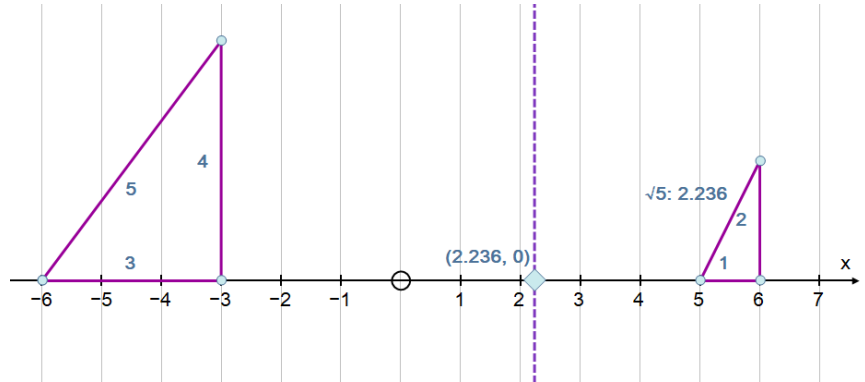
NUMBER LINE

(1, 0), (1/3, 0) and ZOOM

(√2, 0), (√5, 0)

3 d.p. and 4 sig. fig.

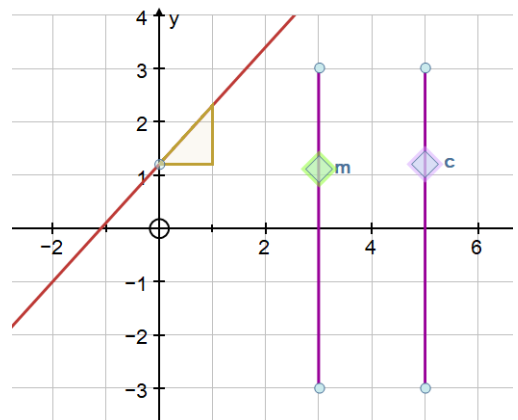
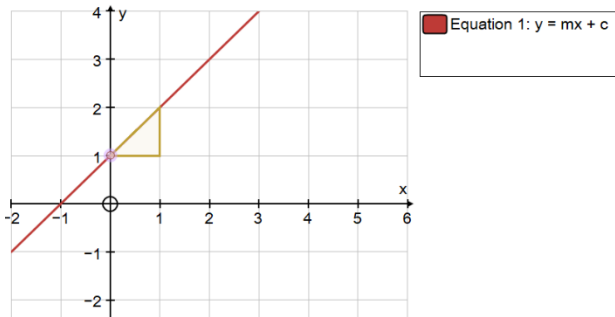
1-2-√5 Pythagoras Triangle



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3. ALGEBRA and GRAPHING (a)

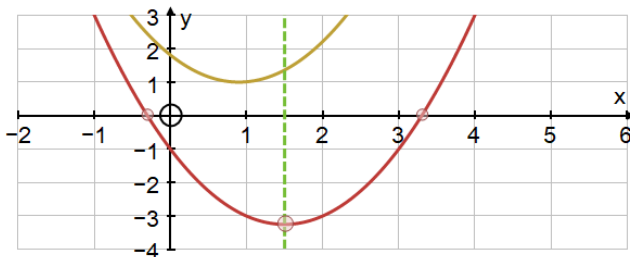
$y = mx + c$: with Constant controller --- and sliders:



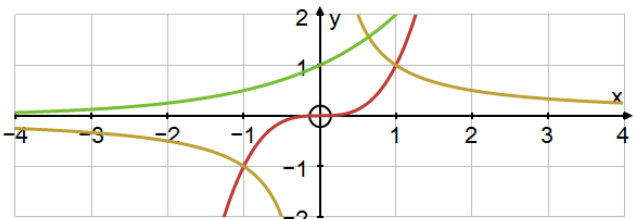
Quadratics: intercepts, turning points

COMPLETING THE SQUARE;

CUBICS and $y = 1/x$; $Y = k^x$

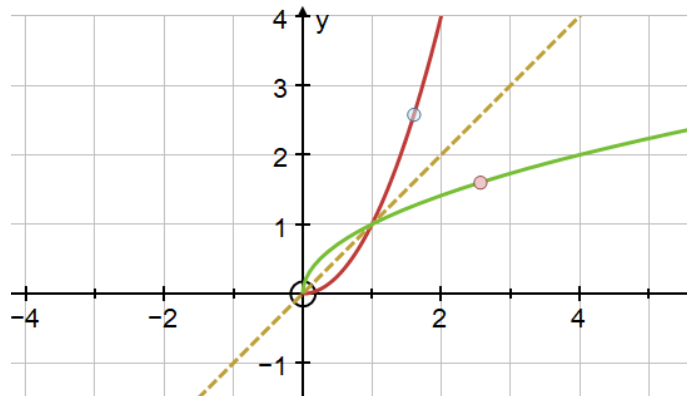


Equation 1: $y = x^2 - 3x - 1$
Equation 2: $y = (x - a)^2 + b$



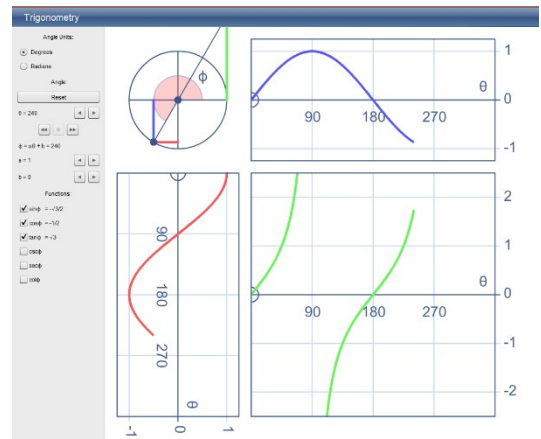
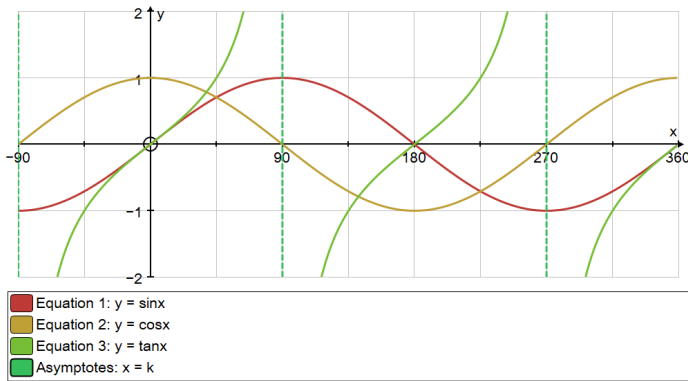
Equation 1: $y = x^3$
Equation 2: $y = 1/x$

GRAPHS OF INVERSE FUNCTIONS

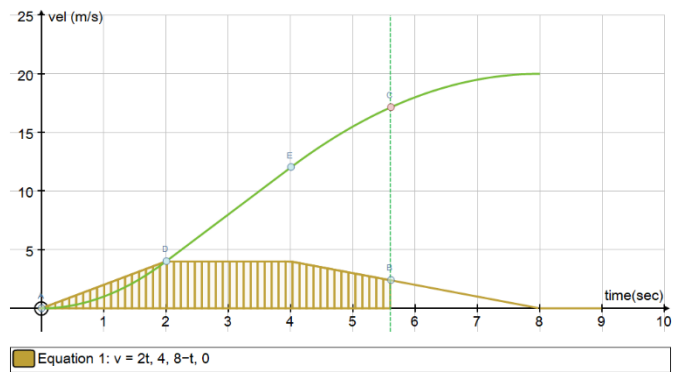


3. ALGEBRA and GRAPHING (b)

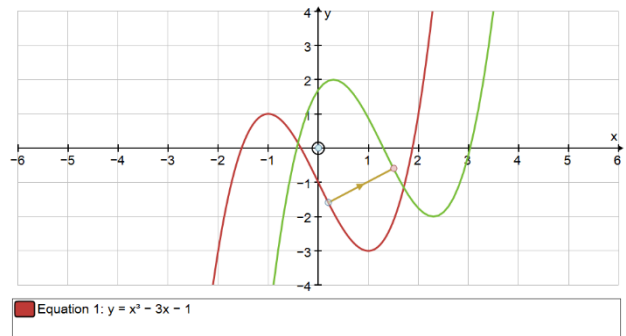
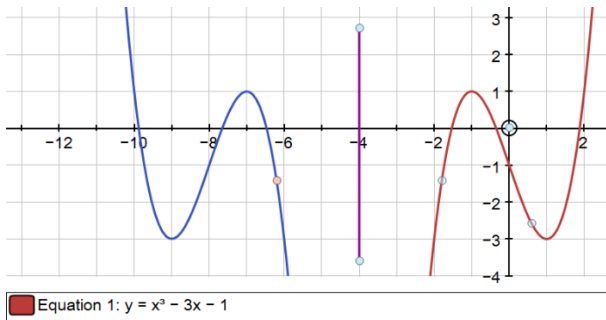
TRIG GRAPHS $\sin x$, $\cos x$, $\tan x$



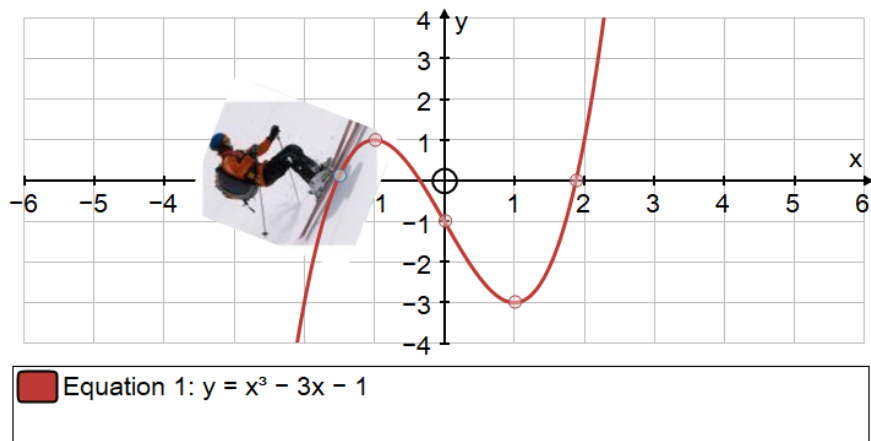
DISTANCE – SPEED – ACCELERATION



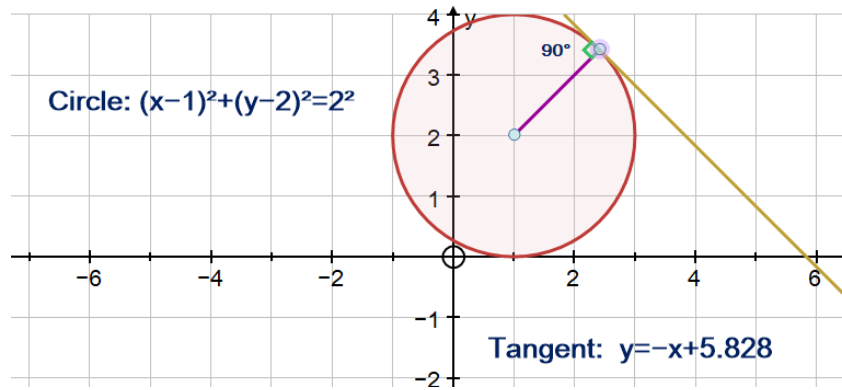
REFLECTIONS and TRANSLATIONS OF GRAPHS (using Locus)



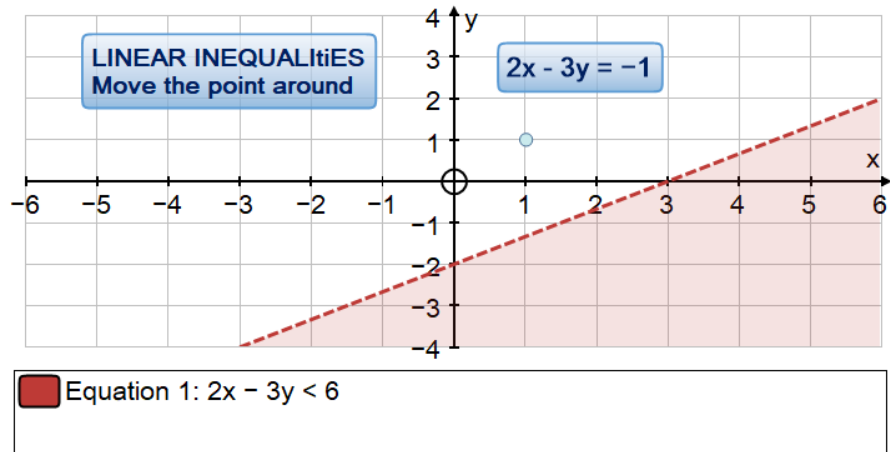
ESTIMATE OF GRADIENT AND AREA



EQUATION OF CIRCLE and tangent

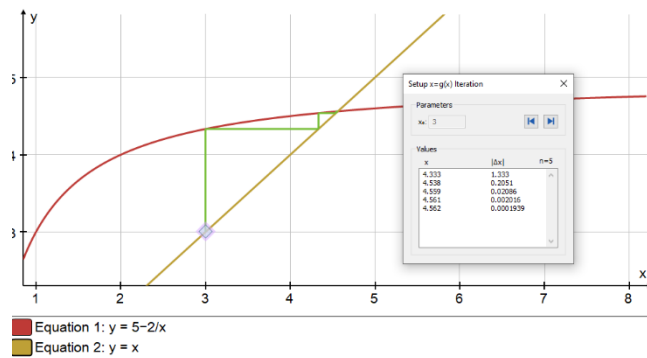


SOLVING LINEAR INEQUALITIES

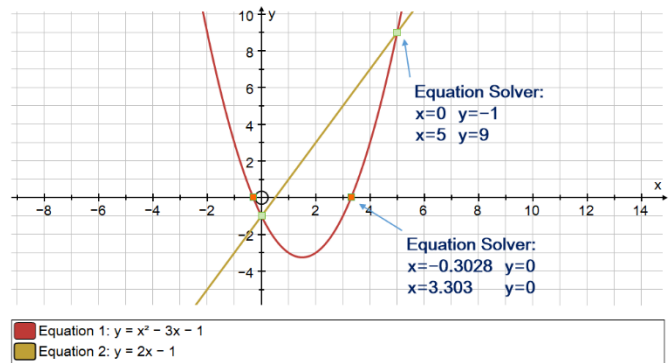
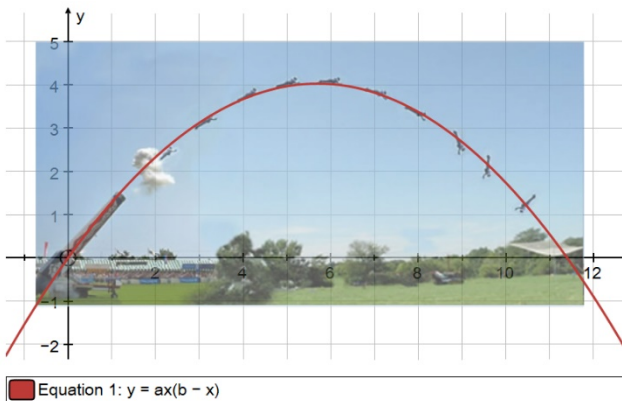


SOLVING BY ITERATION

Solving linear/linear and linear/quadratic



SOLVING QUADRATICS:



4. STATISTICS

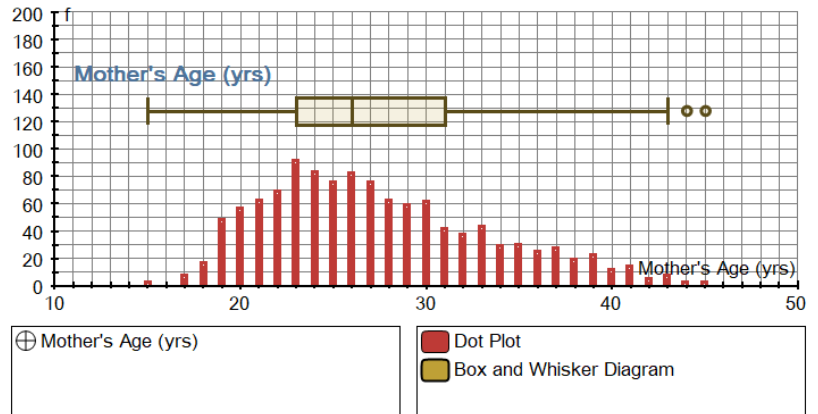
SCATTER GRAPHS

- line of best fit

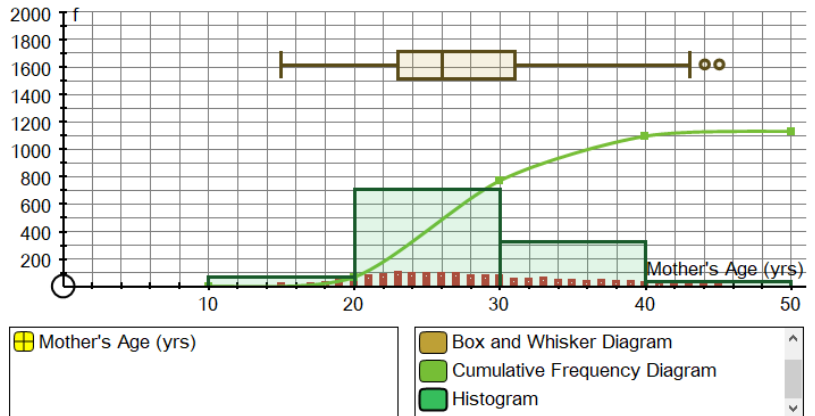


Grouped data
discrete/continuous data

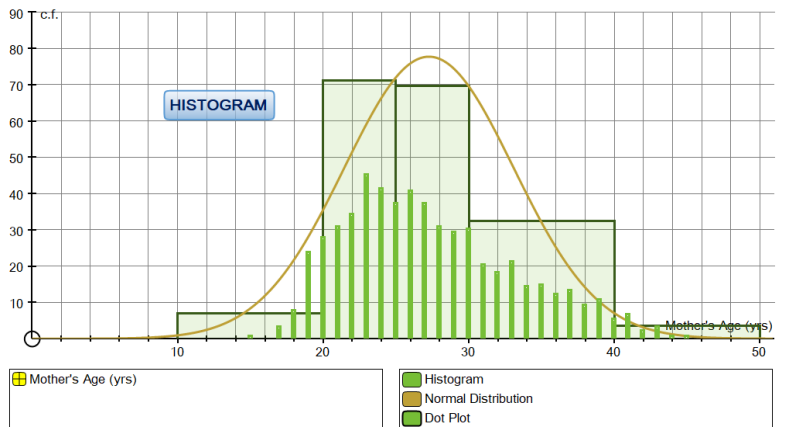
BOX PLOT



CUMULATIVE FREQUENCY DIAG



HISTOGRAM



CONTACT:
DOUGLAS BUTLER
debutler@argonet.co.uk