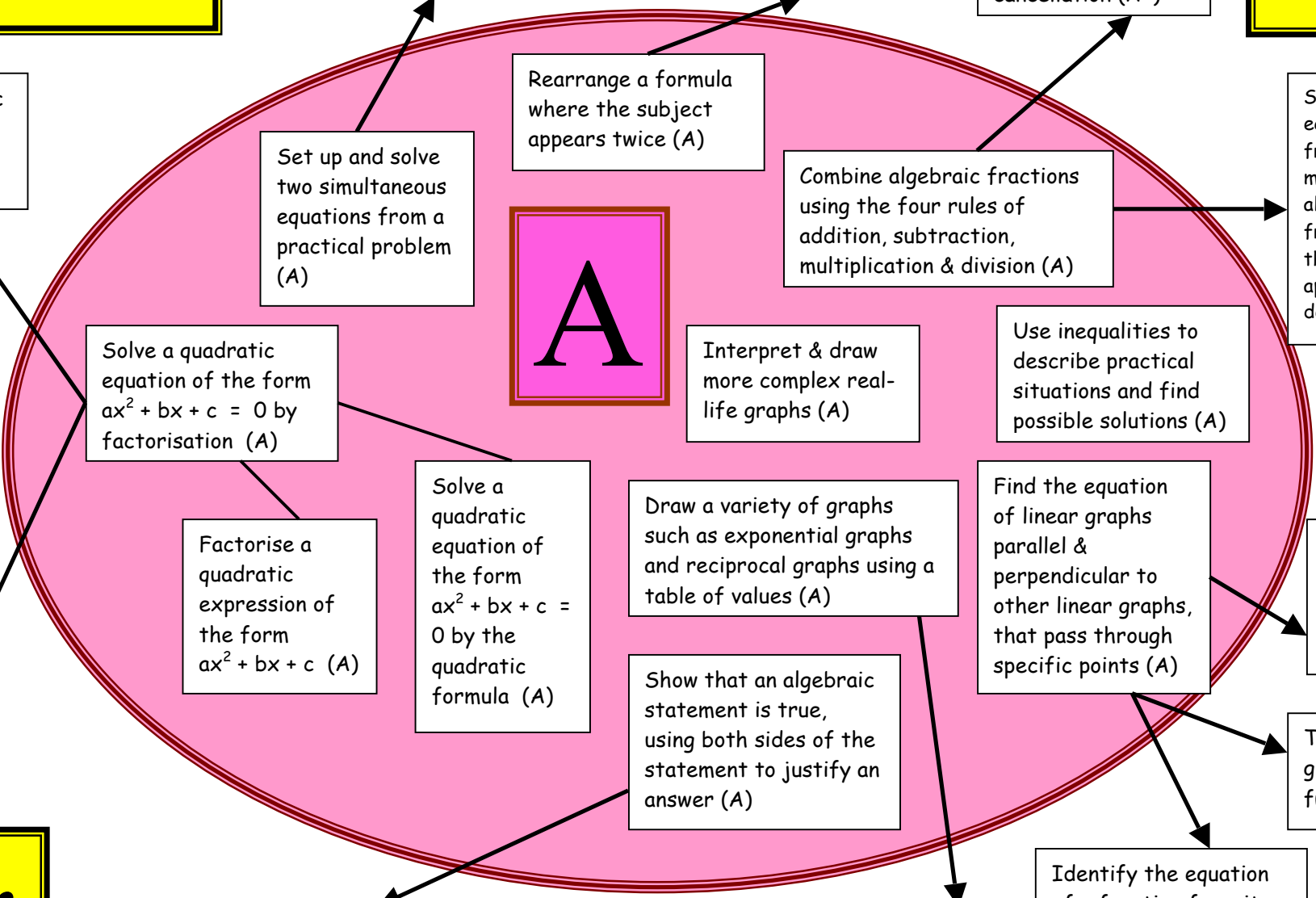
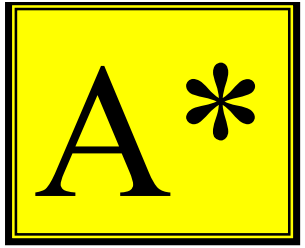


# Algebra

## Moving from A to A\*



Solve a pair of simultaneous equations where one is linear and the other is non-linear (A\*)

Rearrange more complicated formulae where the subject may appear twice or as a power (A\*)

Simplify algebraic fractions by factorisation and cancellation (A\*)

Solve a quadratic equation using completing the square (A\*)

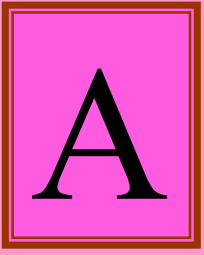
Set up and solve two simultaneous equations from a practical problem (A)

Rearrange a formula where the subject appears twice (A)

Combine algebraic fractions using the four rules of addition, subtraction, multiplication & division (A)

Solve a quadratic equation obtained from manipulating algebraic fractions where the variable appears in the denominator (A\*)

Solve a quadratic equation of the form  $ax^2 + bx + c = 0$  by factorisation (A)



Interpret & draw more complex real-life graphs (A)

Use inequalities to describe practical situations and find possible solutions (A)

Solve real life problems that lead to constructing & solving a quadratic equation (A\*)

Factorise a quadratic expression of the form  $ax^2 + bx + c$  (A)

Solve a quadratic equation of the form  $ax^2 + bx + c = 0$  by the quadratic formula (A)

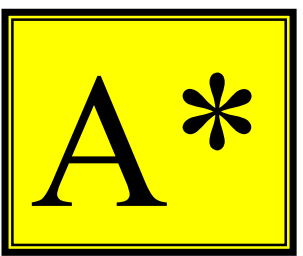
Draw a variety of graphs such as exponential graphs and reciprocal graphs using a table of values (A)

Find the equation of linear graphs parallel & perpendicular to other linear graphs, that pass through specific points (A)

Solve equations using the intersection of two graphs (A\*)

Show that an algebraic statement is true, using both sides of the statement to justify an answer (A)

Transform the graph of a given function (A\*)



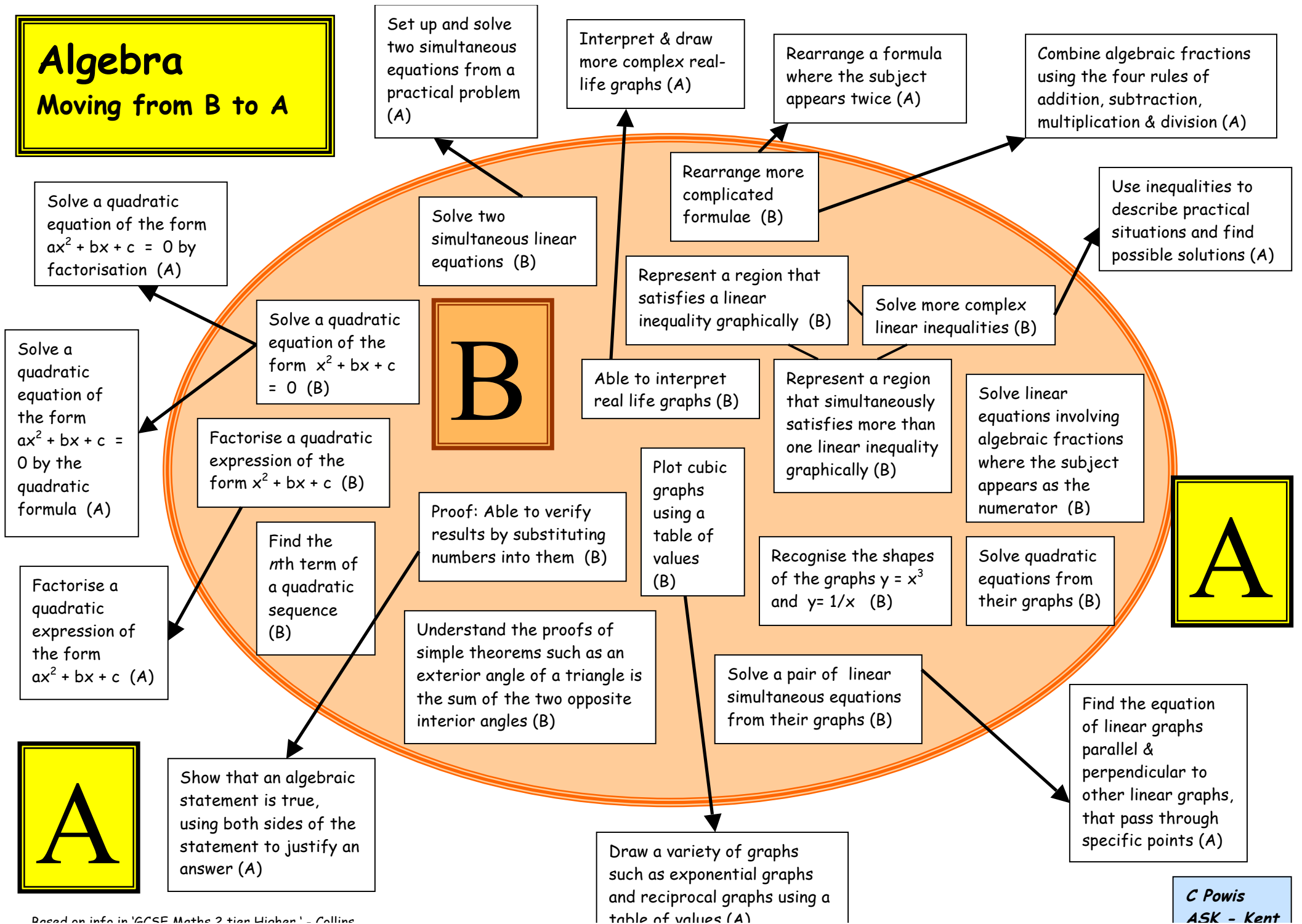
Prove algebraic & geometric results with rigorous and logical mathematical arguments (A\*)

Use trigonometric graphs to solve sine and cosine problems (A\*)

Identify the equation of a function from its graph, which has been formed by a transformation on a known function (A\*)

# Algebra

## Moving from B to A



# Algebra

## Moving from C to B

Factorise a quadratic expression of the form  $x^2 + bx + c$  (B)

Solve a quadratic equation of the form  $x^2 + bx + c = 0$  (B)

Expand a pair of linear brackets to get a quadratic expression (C)

Expand and simplify expressions (C)

Solve two simultaneous linear equations (B)

Rearrange more complicated formulae (B)

Rearrange simple formulae (C)

Solve equations using trial and improvement (C)

Represent a region that satisfies a linear inequality graphically (B)

Solve more complex linear inequalities (B)

Represent a region that simultaneously satisfies more than one linear inequality graphically (B)

Solve linear equations involving algebraic fractions where the subject appears as the numerator (B)

Solve linear inequalities and represent the solution on a number line (C)

**B**

**C**

Able to give the  $n$ th term of a linear sequence (C)

Find the  $n$ th term of a quadratic sequence (B)

Able to give the  $n$ th term of a sequence of powers of 2 or 10 (C)

Able to draw quadratic graphs using a table of values (C)

Solve quadratic equations from their graphs (B)

Draw straight line graphs from equation using the gradient-intercept method (C)

Plot cubic graphs using a table of values (B)

Understand the proofs of simple theorems such as an exterior angle of a triangle is the sum of the two opposite interior angles (B)

Proof: Able to verify results by substituting numbers into them (B)

Interpret real life graphs (B)

Solve a pair of linear simultaneous equations from their graphs (B)

Recognise the shapes of the graphs  $y = x^3$  and  $y = 1/x$  (B)

C Powis  
ASK - Kent

Based on info in 'GCSE Maths 2 tier Higher' - Collins

# Algebra

## Moving from D to C

Expand and simplify expressions (C)

Rearrange simple formulae (C)

Solve equations using trial and improvement (C)

Expand a pair of linear brackets to get a quadratic expression (C)

Expand a linear bracket (D)

Solve linear equations where the variable appears on both sides of the equals sign (D)

Solve linear inequalities and represent the solution on a number line (C)

Factorise simple linear expressions (D)

**D**

Solve linear equations where the variable occurs in the numerator of a fraction (D)

Solve simple linear equations which include the variable in a bracket (D)

**C**

Substitute numbers into expressions (D)

**C**

Substitute numbers into an  $n$ th term rule (D)

Draw straight line graphs from equations by plotting points (D)

Able to give the  $n$ th term of a linear sequence (C)

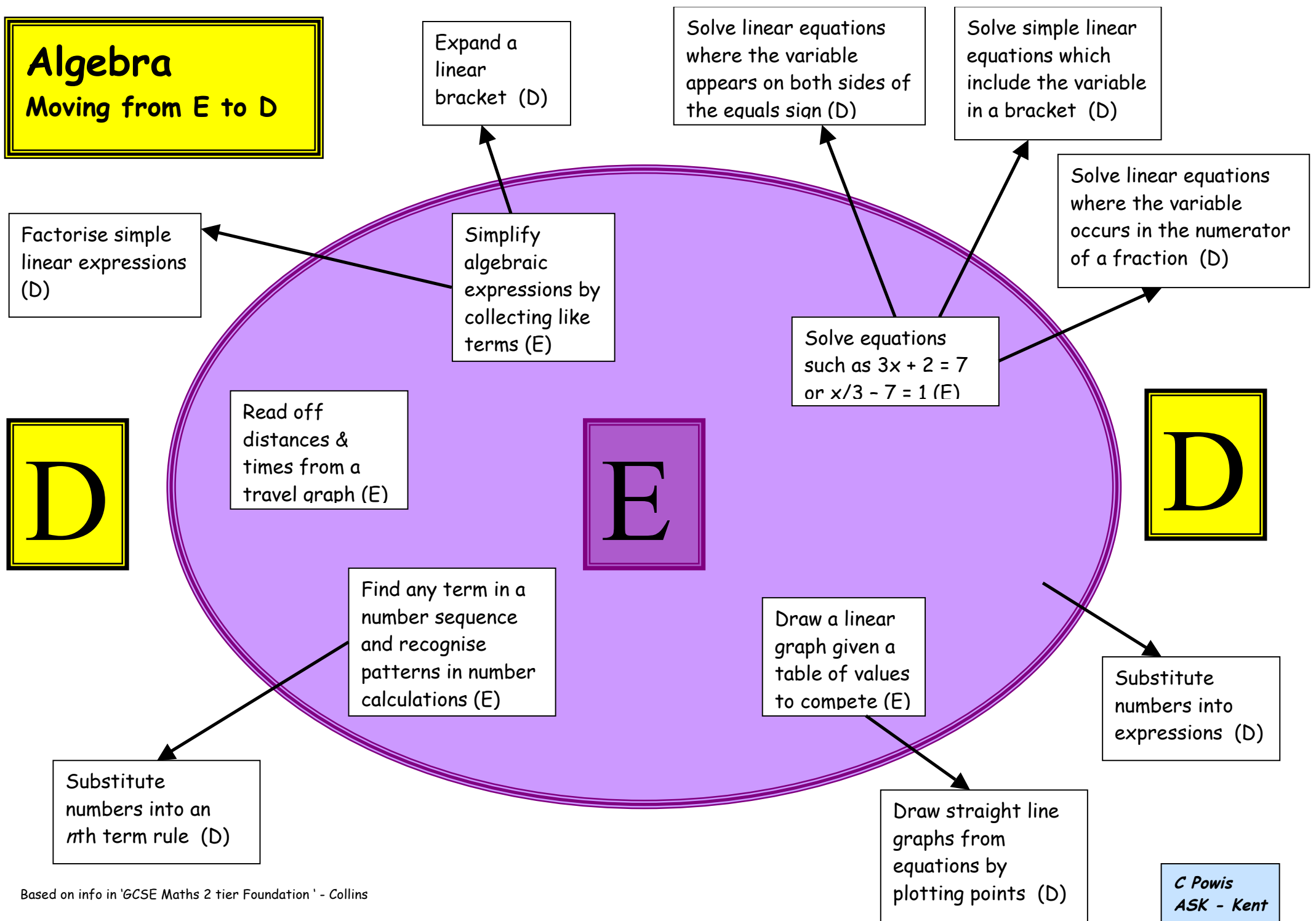
Able to give the  $n$ th term of a sequence of powers of 2 or 10 (C)

Able to draw quadratic graphs using a table of values (C)

Draw straight line graphs from equation using the gradient-intercept method (C)

# Algebra

Moving from E to D



# Algebra

Moving from F to E

Read off distances & times from a travel graph (E)

Read off values from a conversion graph (F)

Substitute numbers into expressions (F)

Use letters to write a simple algebraic expression (F)

Solve equations such as  $3x + 2 = 7$  or  $x/3 - 7 = 1$  (E)

Solve equations such as  $4x = 12$  and  $x - 8 = 3$  (F)

Give the next term in a sequence and describe how the pattern is building up (F)

Plot points in all four quadrants (F)

Find any term in a number sequence and recognise patterns in number calculations (E)

Draw a linear graph given a table of values to complete (E)

# E

# F

# E

# Algebra

Moving from *G* to *F*

**F**

**G**

**F**

Read off values from a conversion graph (F)

Substitute numbers into expressions (F)

Use letters to write a simple algebraic expression (F)

Use a formula expressed in words (G)

Solve equations such as  $4x = 12$  and  $x - 8 = 3$  (F)

Give the next term in a sequence and describe how the pattern is building up (F)

Plot points in all four quadrants (F)