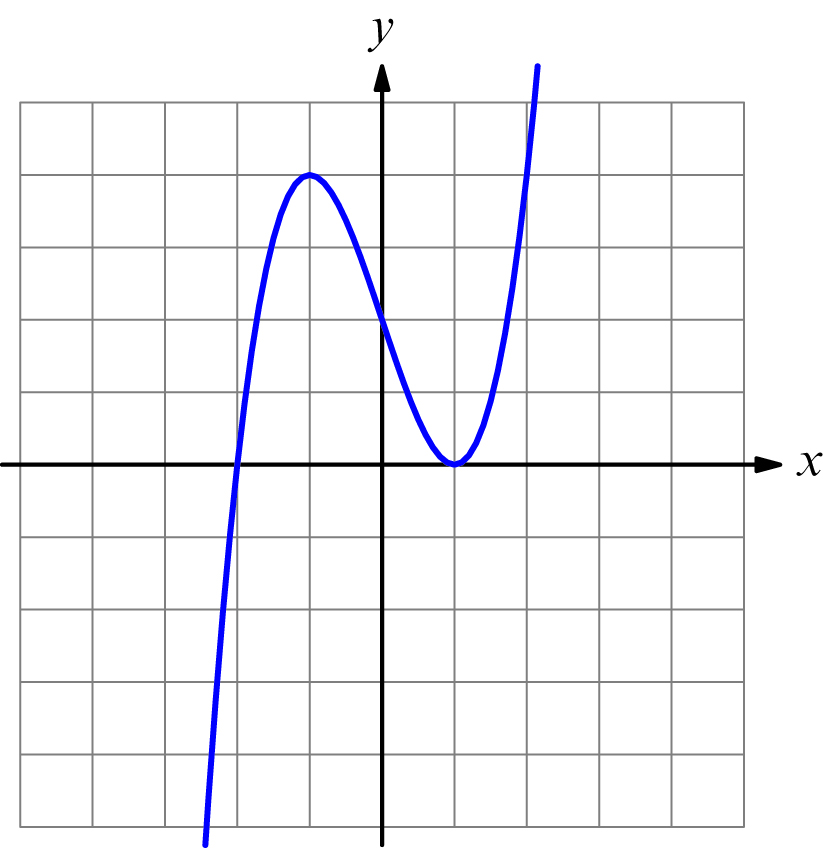
**Self-assessment: 6 Transformations of graphs**

**1.** The diagram shows the graph of *y* = *g*(*x*).



On separate diagrams, sketch the graphs of:

(a) *y* = 2*g*(*x* + 1)

(b) *y* = 

*(accessible to students on the path to grade 3 or 4) [6 marks]*

**2.** **Do not use a calculator to answer this question.**

Sketch the graph of *y* = 3e*x* − 5. State the equation of the horizontal asymptote and the coordinates of the axes intercepts.

*(accessible to students on the path to grade 3 or 4) [5 marks]*

**3.** Find the value of *b* for which *f*(*x*) = 3*x*2 +*bx* + 5 is an even function.

*(accessible to students on the path to grade 5 or 6)* *[3 marks]*

**4.** **Do not use a calculator to answer this question.**

(a) (i) Write *x*2 – 6*x* + 5 in the form (*x* – *h*)2 − *k*.

(ii) Describe a single transformation that transforms the graph of *y* = *x*2 into the graph of *y* = *x*2 – 6*x* + 5.

(iii) Sketch the graph of *y* = |*x*2 – 6*x* + 5|, marking the coordinates of the axes intercepts and the maximum point.

*(accessible to students on the path to grade 3 or 4)*

(b) (i) Add the graph of *y* = *x* − 1 to your sketch.

(ii) Solve the equation |*x*2 – 6*x* + 5| = *x* – 1.

(iii) Solve the inequality |*x*2 – 6*x* + 5| > *x* − 1.

*(accessible to students on the path to grade 5 or 6)*

*[16 marks]*