**Self-assessment: 8 Binomial expansion**

**1.** Find the coefficient of the term indicated in each of the following expansions:

(a) *x*3 in (*x* – 2)7

(b) *x*3*y*7 in (2*x* + 5*y*)10

(c) *x*3 in 

*[4 marks]*

**2.** (a) Find the first three terms in the expansion of (2 – *x*)5.

(b) By substituting a suitable value of *x*, find an approximation for 1.995 correct to five significant figures.

*(accessible to students on the path to grade 3 or 4) [7 marks]*

**3.** (a) Expand and simplify (1 + *x*)4 + (1 – *x*)4.

(b) Hence show that  is an integer and find its value.

*(accessible to students on the path to grade 5 or 6)* *[7 marks]*

**4.** Number *x* satisfies the equation *x*2 = 3*x* − 1.

(a) Show that .

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

(b) (i) Expand and .

(ii) Hence find the values of  and .

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

(c) The constant term in the expansion of  is 70. Find the value of *n.*

*(accessible to students on the path to grade 7)*

*[12 marks]*