Maths HL11 Core – Algebra expressions

1 Write an expression in terms of n for:
   a the sum of a number and 12
   b twice a number minus four
   c a number multiplied by x and then squared
   d the square of a number cubed.

2 Simplify:

   a $9xy + 3x + 6xy - 2x$
      b $6xy - xy + 3y$

3 Simplify:

   a $\dfrac{a^3 b^4}{ab^3}$
      b $2(x^3)^2$
      c $3x \times 2x^3 y^2$

   d $(4ax^2)^0$
      e $4x^2 y \times x^3 y^2$

4 What is the value of x, when:

   a $2^x = 32$
      b $3^x = \dfrac{1}{27}$

5 Expand each expression and simplify if possible.

   a $5(x - 2) + 3(x + 2)$
      b $5x(x + 7y) - 2x(2x - y)$

6 Find the value of $(x + 5) - (x - 5)$ when:

   a $x = 1$
      b $x = 0$
      c $x = 5$

7 Simplify and write the answers with positive indices only.

   a $x^5 \times x^{-2}$
      b $\dfrac{8x^2}{2x^4}$
      c $(2x - 2)^{-3}$

8 If $x \neq 0$ and $y \neq 0$, simplify:

   a $3x^{\frac{1}{2}} \times 5x^{\frac{1}{2}}$
      b $(81y^6)^{\frac{1}{2}}$
      c $(64x^3)^{\frac{1}{3}}$