1. Express the following as a single logarithm:
   (a) $\log_3(8-2x) - \log_3(x-2)$,
   (b) $\lg(x-4) + 2\lg 5$,
   (c) $\log_5 x - 3\log_5 y + 2$,
   (d) $\log_2 x + 6\log_8 y$.

2. Solve the following equations:
   (a) $2^x = 6$,
   (b) $\log_x 125 = \log_2 8$.

3. Solve $3^{2x+2} = 8 + 2\,(3^{x+1})$.

4. A cuboid has a rectangular base with dimensions $2\sqrt{3}+1$ cm and $8\sqrt{3}-10$ cm. It has a volume of $\dfrac{20+7\sqrt{3}}{2}$ cm^3. Find
   (a) the base area,
   (b) the height of the cuboid,
   leaving your answers in surd form.

5. The line $3x - 2y = 1$ intersects the curve $y = \dfrac{3}{x} + 1$ at the points A and B. Find the coordinates of A and B.