S5/6 National 5 Maths Homework 8C

1. Factorise fully.
   a) $3x + 6$ b) $y - y^2$ c) $2a^2 - 2b^2$
   d) $u^2 - u - 6$ e) $5k^2 - 45$ f) $2d^2 - 2d - 144$

2. In a survey of 2 400 people, 35% went abroad on holiday.
   12.5% of those who went abroad visited Florida.
   How many people went to Florida?

3. $P = 2x^3 - 3xy$. Calculate P when x = -4 and y = -2

4. Simplify
   a) $3(2w - 1) - (w - 4)$ b) $4p - (2p - 3)^2$

5. A lake has an estimated volume of 3.66×10^5 litres of water.
   A sample of one litre of water from the lake contains
   40 000 bacteria. If this sample is representative of
   the whole lake, how many bacteria are in the lake?
   Leave your answer in scientific notation

6. Simplify
   a) $\frac{x}{5} + \frac{y}{2}$ b) $\frac{w}{3} + \frac{2b}{5}$ c) $\frac{v}{2} - \frac{3x}{4}$ d) $\frac{m}{n} \times \frac{p}{y}$ e) $\frac{y}{2} \div \frac{y}{3}$
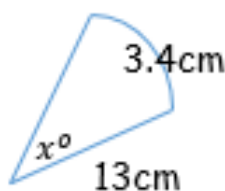
7. Complete the square.
   a) $x^2 + 4x - 7$ b) $6 - 8y - y^2$ c) $3p^2 - 6p + 12$

8.
   3.4cm   Find the size of the centre angle in this
                  sector.
   x^o
   13cm