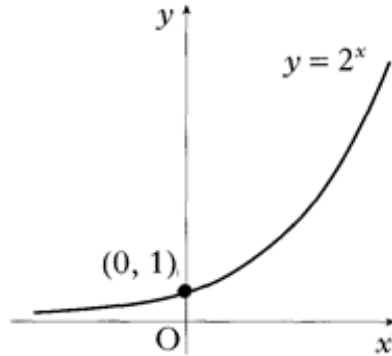




# Ross High School: Mathematics Department

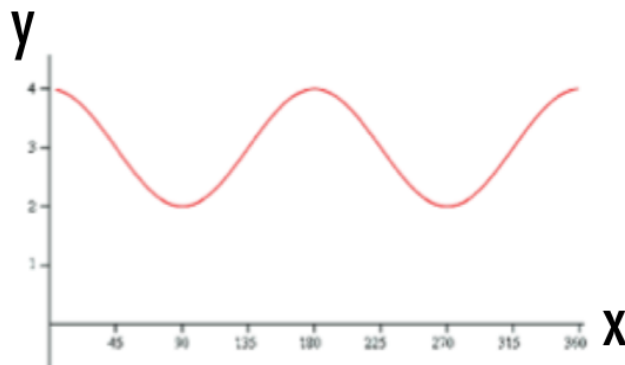
## Higher Mathematics: Homework 13

1. Part of the graph of  $f(x) = 2^x$  is shown below.



- Sketch the graph of the inverse of this function. Label where this graph cuts the y-axis.
- Sketch the graph of  $f(x) = 3f(x)$ .
- Sketch the graph of  $f(x) = 2f(x) + 1$ .
- Sketch the graph of  $f(x) = 2^{-x} - 8$ . Label where this graph cuts both axes. (8)

2. Write down the equation of this graph.



(3)

3. Sketch the graph of  $y = 3\sin\left(x - \frac{2\pi}{3}\right)$  for  $0 \leq x \leq 4\pi$

Clearly show the maximum and minimum values and where it cuts both axes. [3]

4. Convert to radians:

- i.  $120^\circ$       ii.  $100^\circ$       iii.  $35^\circ$       iv.  $350^\circ$       v.  $780^\circ$  (5)