1. Given that $\tan \theta = -\frac{8}{15}$ and θ is reflex, find without using mathematical tables or a calculator the values of;

   a) $\mathrm{cosec}\,\theta$

   b) $\sec \theta$

   (05 marks)

2. Without the use of mathematical tables or a calculator, evaluate the following.

   a) Cos 540°

   b) Cosec − 225°

   (05 marks)

3. Solve $3\cos^2 2\theta = 2\sin 2\theta \cos 2\theta$ for $-180° \le \theta \le 180°$ **(05 marks)**

4. Solve $3\cos(x+30°) - \sec(x+30°) = 0.5$ for $0° \le x \le 360°$ **(05 marks)**

5. Find the maximum point of $y = 2 + x - 3x^2$. Hence sketch the graph of the function. **(10 marks)**

6. Find the range of values of p for which the quadratic equation $p(x^2 - 1) = 3x + 2$ has two distinct real roots. **(05 marks)**

7. Calculate the slope of the curve $f(x) = 2x^2 - 3x + 4$ at the point when x = 0.25. **(05 marks)**