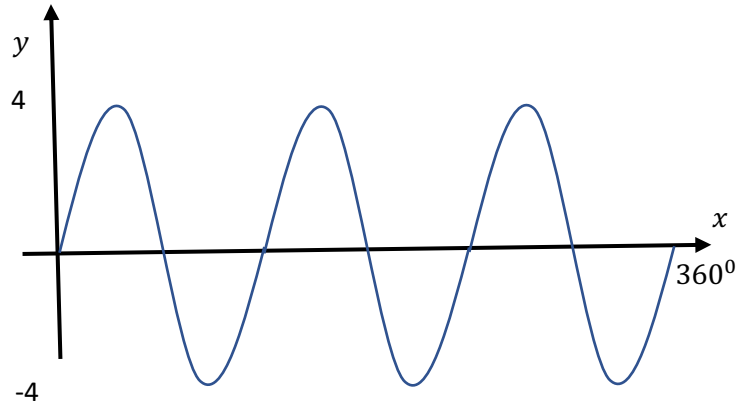1. Shown below is part of the graph with equation $y = a \sin bx$. State the values of a and b.

2. Factorise $9x^2 - 4$ and hence simplify. $\dfrac{9x^4 - 4}{3x^2 + 10x - 8}$.

3. Express as a fraction with a rational denominator in its simplest form.

    a) $\dfrac{6}{\sqrt{10}}$ b) $\dfrac{8}{\sqrt{6}}$ c) $\dfrac{9}{\sqrt{27}}$ d). $\dfrac{10}{\sqrt{8}}$

4. After a charge of 8% is added for service, a bill comes to £75.60. Work out the cost of the bill before the service charge is added.

5. Show clearly that $3x^2 - 5x + 3 = 0$ has no real roots.

6. Express $x^2 - 6x + 11$ in the form $(x - a)^2 + b$. State the coordinates of the turning point of the graph.

7. Solve this pair of equations

$$3x - 4y = 25$$
$$2x + 3y = -6$$