**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. Find the equation of the perpendicular bisector of the line joining $Q(0, 3)$ and $D(5, 4)$.
2. The functions $f$ and $g$, defined on suitable domains, are given by

$f\left(x\right)=\frac{1}{x^{2}-4} $and $g\left(x\right)=x+1$.

1. Find an expression for $h(x)$, where $h\left(x\right)=f(g\left(x\right))$.
2. State a suitable domain for $h$.
3. Find the first three terms and the limit, if it exists, for this recurrence relation:

$$u\_{n+1}=0.2u\_{n}+8, u\_{0}=5$$

1. The points $A\left(0,3\right)$ and $B(4, 1)$ lie on the graph $y=f(x)$. Write down the coordinates of the images of those points on the graph $y=f\left(2x\right)-4$.
2. Solve $5\sin(\left(2x\right))=2.5 $for $0\leq x\leq 360$.
3. Find the **gradient** of the tangent to the curve $f\left(x\right)=\frac{3-2x}{x^{2}}$ at $x=-1$.