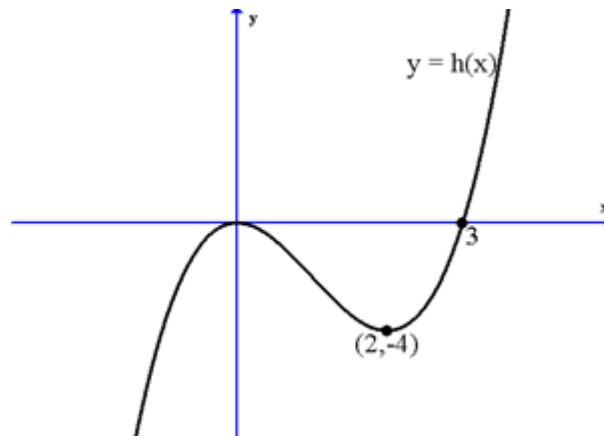




1. Solve $4\text{Log}_2 8 = x\text{Log}_3 9$
2. Relative to a set of axis, triangle ABC has coordinates A(-1, 2), B(4, 3) and C(3, 8). Find the equation of the altitude from B.
3. Calculate the angle between vectors \mathbf{u} and \mathbf{v} where $\mathbf{u} = \begin{pmatrix} 1 \\ 4 \\ 2 \end{pmatrix}$ and $\mathbf{v} = \begin{pmatrix} 0 \\ 2 \\ 3 \end{pmatrix}$.
4. If $\text{Cos } A = \frac{\sqrt{5}}{3}$, find the **exact** values of $\text{Sin}2A$ and $\text{Cos}2A$.
5. $U_{n+1} = 0.6U_n + 3$. Explain why this sequence has a limit and find this limit.
6. Show that $\frac{\text{Sin}A + \text{Cos}A}{\text{Cos}A} = 1 + \text{Tan}A$.
7. Find the gradient of the function $f(x) = x^3 + x^2 - 7x - 12$ at the point where $x = 3$.
8. The graph of $y = h(x)$ is shown below.
On separate diagrams, sketch the graphs of $y = h(2x)$ and $y = h'(x)$.



9. Find the gradient of the function $f(x) = 4\text{Cos}x + 3\text{Sin}x$ where $x = \frac{\pi}{3}$
10. Sketch the graph of $y = \text{Log}_3(x - 4)$, annotating at least 2 points on your graph.