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| **Algebra Revision**  | **6** |
| **(a)** | **(b)** | **(c)** | **(d)** | **(e)** |
| Make $x$ the subject of the formula$$y^{2}=\frac{ax-c}{x+1}$$ | $y$ is inversely proportional to the cube root of $x$. When $x=27$, $y=2.5$. Find a formulae for $y$ in terms of $x$. | Prove that$$(2n+3)^{2}+(2n-1)^{2}$$is even for all positive values of $n $ | The curve with equation$y=f(x)$ has a maximum point at $(2, 7)$. Write down the coordinates of the maximum point of the curve with equation:(i) $y=3f\left(x\right)$(ii) $y=f(x-4)$ | $$f\left(x\right)=\frac{x}{2x+3 }$$$$g\left(x\right)=1-6x$$Find $fg(x)$ in its simplest form |
| **(f)** | **(g)** | **(h)** | **(i)** | **(j)** |
| $$f\left(x\right)=\frac{2x}{7}+1$$Find $f^{-1}(x)$ | Solve $\frac{x-1}{2}+\frac{3}{x}=3$ | Solve $2x^{2}-5x>3$ | Here are the first five terms of a sequence:$$4, 7, 10, 13, 16,…$$Find the sum of the 6th to the 50th term of this sequence. | The curve $y=2x^{2}+\frac{32}{x}$ has one stationary point. Find the coordinates of this point. |

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