**Functions Revision**

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| **(a)** | **(b)** | **(c)** | **(d)** |
| $$f\left(x\right)=x^{2}+6$$Find $f(4)$ | $$g\left(x\right)=\frac{x}{x+5}$$Find $g(-1)$ | $$f\left(x\right)=2(x-1)^{2}$$Find $f(1.5)$ | $$f\left(x\right)=3x-1$$Given $f\left(a\right)=11$, find the value of $a$ |
| **(e)** | **(f)** | **(g)** | **(h)** |
| $$f\left(x\right)=\frac{3}{2x-4}$$Solve $f\left(x\right)=1$ | $f\left(x\right)=x^{2}$ $g\left(x\right)=x+6$Solve $f\left(x\right)=g(x)$ | $$g\left(x\right)=\frac{3x}{x-4}$$Find the value of $x$ that cannot be included in any domain of $g$. | $f\left(x\right)=2x^{2}$ $g\left(x\right)=x-5$Find $fg(8)$ |
| **(i)** | **(j)** | **(k)** |
| $f\left(x\right)=4-3x$ $g\left(x\right)=\frac{1}{2x+1}$Find $gf(x)$, simplifying your answer. | $$g\left(x\right)=4x-7$$Find the inverse function $g^{-1}(x)$ | $$f\left(x\right)=\frac{3x}{2x-1}$$Find the inverse function $f^{-1}(x)$ |
| **(l)** | **(m)** | **(n)** |
| $f\left(x\right)=\frac{3}{2x+1}$ $g\left(x\right)=5-x$Solve $fg\left(x\right)=-1$ | $$f\left(x\right)=\frac{2x}{1-3x}$$Solve $f\left(x\right)=f^{-1}(x)$ | $$g\left(x\right)=\frac{2x}{x+1}$$Find $gg(x)$ |