Functions Revision

(a)

$f(x) = x^2 + 6$

Find $f(4)$

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(b)

$g(x) = \frac{x}{x+5}$

Find $g(-1)$

-0.25

(c)

$f(x) = 2(x-1)^2$

Find $f(1.5)$

0.5

(d)

$f(x) = 3x - 1$

Given $f(a) = 11$, find the value of a

$x = 4$

(e)

$f(x) = \frac{3}{2x-4}$

Solve $f(x) = 1$

$x = 3.5$

(f)

$f(x) = x^2 \quad g(x) = x + 6$

Solve $f(x) = g(x)$

$x = 3, x = -2$

(g)

$g(x) = \frac{3x}{x-4}$

Find the value of x that cannot be included in any domain of g.

$x \neq 4$

(h)

$f(x) = 2x^2 \quad g(x) = x - 5$

Find $fg(8)$

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(i)

$f(x) = 4 - 3x \quad g(x) = \frac{1}{2x+1}$

Find $gf(x)$, simplifying your answer.

$\frac{1}{9-6x}$

(j)

$g(x) = 4x - 7$

Find the inverse function $g^{-1}(x)$

$g^{-1}(x) = \frac{x+7}{4}$

(k)

$f(x) = \frac{3x}{2x-1}$

Find the inverse function $f^{-1}(x)$

$f^{-1}(x) = \frac{x}{2x-3}$

(l)

$f(x) = \frac{3}{2x+1} \quad g(x) = 5 - x$

Solve $fg(x) = -1$

$x = 7$

(m)

$f(x) = \frac{2x}{1-3x}$

Solve $f(x) = f^{-1}(x)$

$x = 0, x = -\frac{1}{3}$

(n)

$g(x) = \frac{2x}{x+1}$

Find $gg(x)$

$gg(x) = \frac{4}{3x+1}$