Sum/Difference/Product/Quotient of Functions Recap

1. Given $f(x)=\log_2(x+4)$ and $g(x)=\log_2(3-x)$.

   a) State the domain of f.

   b) State the domain of g.

   c) Find $(f+g)(x)$ and state the domain.

   d) Find $(f-g)(x)$ and state the domain.

   e) Find $\left(\frac{f}{g}\right)(x)$ and state the domain.

   f) Find $\left(\frac{g}{f}\right)(x)$ and state the domain.

2. Given $f(x)=\sqrt{x+1}$ and $g(x)=\sqrt{4-x^2}$.

a) State the domain of f.

b) State the domain of g.

c) Find $(f-g)(x)$ and state the domain.

d) Find $\left(\frac{f}{g}\right)(x)$ and state the domain.

3. Given $f(x) = \tan\left(x - \frac{\pi}{4}\right)$ and $g(x) = \sec\left(x - \frac{\pi}{4}\right)$.

a) State the domain of f.

b) State the domain of g.

c) Determine $(g-f)(x)$ and state the domain.

d) Determine $\left(\frac{g}{f}\right)(x)$ and state the domain.