2C Composite Functions

1. Given:

   $f(x) = x^2$ $g(x) = x + 1$

   Find:

a) $fg(x)$

b) $gf(x)$

2. Given:

   $f(x) = 3x + 2$ $g(x) = x^2 + 4$

   Find:

a) $fg(x)$

b) $gf(x)$

c) $f^2(x)$

d) The values of b so that $fg(b) = 62$

3. The functions f and g are defined by:

$$f: x \to |2x - 8|$$

$$g: x \to \frac{x + 1}{2}$$

a) Find $fg(3)$

b) Solve $fg(x) = x$