For the functions f and g, find:

a. $(f + g)(x)$,
b. $(f - g)(x)$,
c. $(f * g)(x)$,
d. $(f / g)(x)$

1) $f(x) = x - 7,\ g(x) = 2x + 1$

a.

$$(f + g)(x) = f(x) + g(x)$$
$$(f + g)(x) = x - 7 + 2x + 1$$
$$(f + g)(x) = 3x - 6$$

b.

$$(f - g)(x) = f(x) - g(x)$$
$$(f - g)(x) = x - 7 - 2x - 1$$
$$(f - g)(x) = -x - 8$$

c.

$$(f * g)(x) = f(x) * g(x)$$
$$(f * g)(x) = (x - 7)(2x + 1)$$
$$(f * g)(x) = 2x^2 - 13x - 7$$

d.

$$(f/g)(x) = f(x)/g(x)$$
$$(f/g)(x) = \frac{x - 7}{2x + 1}$$

3) $f(x) = x^2 + 1,\ g(x) = 5x$

5) $f(x) = \sqrt{x},\ g(x) = x + 5$

7) $f(x) = -3x,\ g(x) = 5x^2$