PENANG SANGAM HIGH SCHOOL

YEAR 13

MATHEMATICS

WORKSHEET 6 – FUNCTIONS

1. Functions f and g are given as $f(x) = 2x^2 + 1$ and $g(x) = 4x - 3$. Find

a) $(f + g)(x)$

b) $(f - g)(x)$

c) $(f.g)(x)$

d) $\left(\frac{f}{g}\right)(x)$

e) $(fog)(x)$

f) $(gof)(x)$

2. Given $f(x) = x + 3$ and $g(x) = \sqrt{x}$; find

a) $fog(x)$

b) $fog(-2)$

c) $gof(x)$

3. Functions f and g are defined as $f(x) = \sqrt{x - 1}$ and $g(x) = x^2$.

a) Find $fog(x)$.

b) State the domain and range of $fog(x)$.

4. The functions f and g are defined by $f(x) = \frac{2}{1-x}$ and $g(x) = x^2 - 2$. Find

a) the domain of $f(x)$.

b) the range of $f(x)$.

c) the domain of $g(x)$.

d) the range of $g(x)$.

e) $gof(x)$

5. The functions f and g are defined by $f(x) = (x + 2)^2$ and $g(x) = \frac{1}{2}x - 6$. Find

a) $(fog)(x)$

b) $g^{-1}(-2)$

The End