Find the following given f(x) and g(x). On problems 3 – 6 also find the domain

$$f(x) = \frac{2}{x} \qquad g(x) = \sqrt[3]{x-8}$$

1. Find $f(g(9))$

2. Find $g\left(f\left(\frac{1}{4} \right) \right)$

3. Find $f(g(x))$

4. Find $g(f(x))$

5. Find $f^{-1}(x)$

6. Find $g^{-1}(x)$