[graphing]

1. State the definition for a function.

2. For the relation $h(x) = 5x - 3$, find m if $h(m = 12)$

3. For each relation state the
   a. Domain
   b. Range
   c. Whether or not it is a function

   i. $\{(1,5), (2,-7), (3,4)\}$

4. Given the function g defined by $g(x) = 3x^2 - 2$,
   a. Draw the graph of g and g^{-1} including the table of values.
   b. Determine the defining equation of g^{-1}

5. Given $f = \{(1,1), (2,3), (3,5), (4,7)\}$

   $g = \{(1,-5), (3,2), (6,5), (8,6)\}$

   a. State the domain of f
   b. Is f a function?
   c. State the domain of $f + g$
   d. State g^{-1}
   e. Find $f\big(g(3)\big)$
   f. Determine x if $g(x) = 6$

6. Sketch and label each graph on separate axes using transformations
   a. $y = -\left|\frac{1}{3}x\right| - 4$
   b. $y = 5\sqrt{x+2} + 3$
   c. $y = -2(x-3)^2 + 4$

7. Given $f(x) = 2x - 1$ and $g(x) = 2x^2$ determine each of the following:
   a. $(f + g)(x)$
   b. $(g - f)(x)$
   c. $(f \circ g)(x)$
   d. $(g \circ f)(x)$
   e. $f\big(g(2m)\big)$

8. If $f(x) = 2x + 3$, $g(x) = x^2 - 1$ and $-3 \leq x \leq 3$, draw the graphs of f, g, $f + g$