Quiz 3.3-3.8 $\overline{23} + \overline{2}$ Name:_____

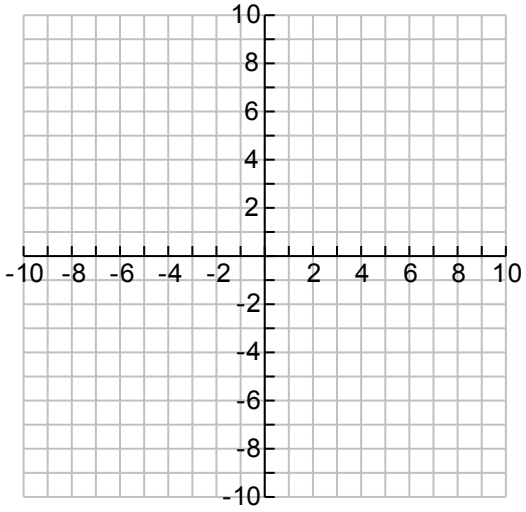
MCR 3U

1. Given $y = \sqrt{x}$, describe what transformations have occurred for the following: [2]

   a) $y = \frac{1}{3}\sqrt{x}$ _____ b) $y = \sqrt{\frac{1}{3}x}$ _____

2. Given $f(x) = 2(x+1)^2 + 2$

   a) Find the equation of $f^{-1}(x)$ [2]



   b) Restrict the domain of $f(x)$ so that $f^{-1}(x)$ is also a function. State the new equations. [2]

   c) Graph $f(x)$ and $f^{-1}(x)$ keeping your restrictions in mind. [2]

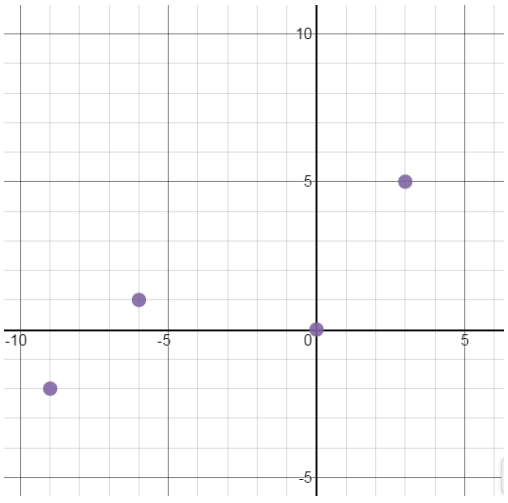
3. Given $f(x) = \frac{1}{x}$, write the equation which describes the transformations on $f(x)$ are $-2f(3(x-2))+1$ [1] _____

4. a) Given $y = 4(-3x-6)^2 - 1$, write the transformations on $y = f(x)$ using function notation. [1] _____

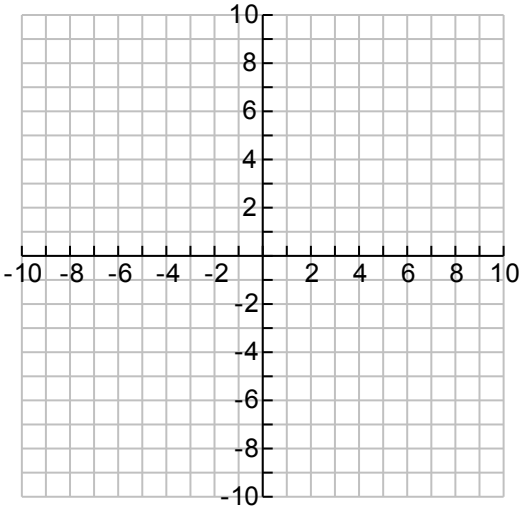
   b) There is another way to describe the transformations which would give the same effect on the graph. State using function notation. [1] _____

5. Graph the following:

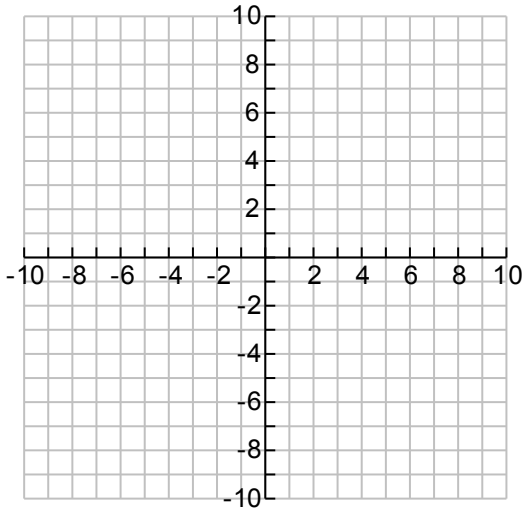
   a) Given f(x), Graph $2f(-3x)-1$ [3]



   b) $y = -2(2)^{4-2x} + 1$ [3]



c) $f(x) = -\sqrt{\frac{1}{2}x + 3} + 1$ [3]



d) If $g(x) = \frac{1}{x}$, *graph* $y = -g(-2(x-2)) + 1$ [3]