

In Questions 1-10 refer to the following equations

$$f(x) = \frac{1}{x^2}$$

$$g(x) = 2x^2 + 1$$

$$h(x) = \sqrt{x-1}$$

1. What is the domain of f ? 1. _____
2. What is the domain of h ? 2. _____
3. What is the range of g ? 3. _____
4. $\frac{f(x)}{g(x)} = ?$ 4. _____
5. $h(x) + g(x) = ?$ 5. _____

6. $f(f(x)) = ?$ 6. _____

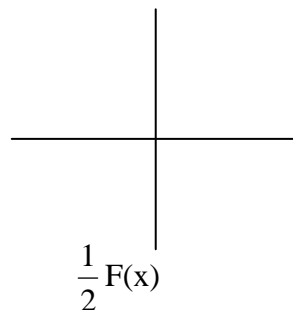
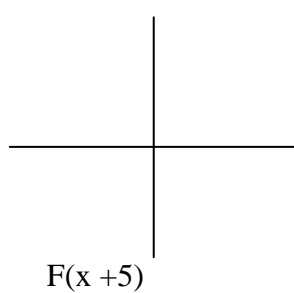
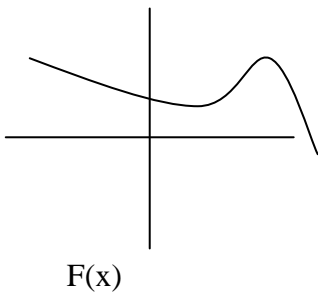
7. $g(x) \cdot f(x) = ?$ 7. _____

8. $h(g(x)) = ?$ 8. _____

9. $f(g(1)) = ?$ 9. _____

10. $g(h(f(7)))$ 10. _____

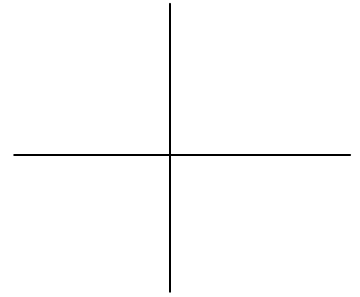
11. Given the graph of $F(x)$, Sketch the graph of each of the following



Given the function $f(x) = x^3 - 11x - 5$ determine the following

12. Sketch the Graph

12



13. Local Maximums (as coordinates)

13. _____

14. Local Minimum (as coordinates)

14. _____

15. Values when $f(x)$ is increasing

15. _____

16. Values when $f(x)$ is decreasing

16. _____

17. Is $g(x) = \frac{x}{x^2}$ odd, even, or neither? Show Algebraically

18. A camp counselor is designing a playfield for a new group activity. They have two-hundred feet of rope and they need to divide the field such that each of six groups have a rectangle with as much area as possible. The final field will look like this. What are the dimensions of each rectangle?



19. A rectangular piece of cardboard 2 feet x 8feet is going to strips cut off of each side. Each strip will be the same width. By doing this the total area will cut in $\frac{1}{2}$. How wide is each strip?

