Homework 16 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Find the domain of the rational function
	1. $R\left(x\right)=\frac{4x}{x-3}$
	2. $S\left(x\right)=\frac{6}{\left(x+3\right)(4-x)}$
	3. $T\left(x\right)=\frac{\left(3x^{2}+x\right)}{x^{2}+4}$
	4. $F\left(x\right)= -\frac{2\left(x^{2}-4\right)}{3(x^{2}+4x+4)}$
2. Find the vertical asymptotes of the following functions
	1. $R\left(x\right)=\frac{3x}{x+4}$
	2. $S\left(x\right)=\frac{x^{3}}{x^{4}- 1}$
	3. $T\left(x\right)=\frac{4x^{5}}{x^{3}- 1}$
	4. $F\left(x\right)=\frac{x-1}{x-x^{3}}$
3. Find the horizontal asymptotes
	1. $R\left(x\right)=\frac{3x+5}{x^{2}-6}$
	2. $S\left(x\right)=\frac{x^{3}}{x^{3}+2x+11}$
	3. $T\left(x\right)=\frac{6x^{2}+ 2x+7}{x^{3}+ 2}$
	4. $F\left(x\right)=\frac{x-1}{x-x\^3}$