A2: Sketching Rational Functions WKST 2

I. Sketch the graph of each function. State the domain and range in interval notation.

1. $g(x)=\dfrac{2}{x+3}$

2. $y=\dfrac{4x^2+8x}{x^2-3x}$

3. $f(x)=\dfrac{3x^2-12x}{x^2-2x-3}$

4. $y=\dfrac{2-x}{x^2-4}$

5. $f(x)=\dfrac{1-3x}{x}$

6. $f(x)=\dfrac{x^2}{x^2-4}$

II. State the domain. State the answer in set notation.

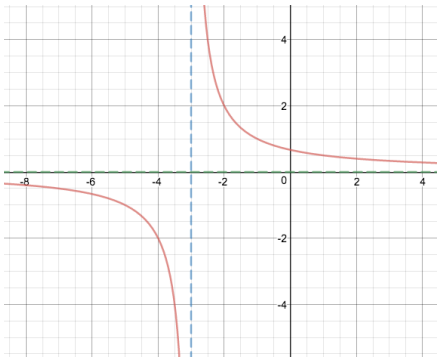
7. $y=\dfrac{3x^2}{x^2-9}$

8. $f(x)=\dfrac{x^2-2x}{2x^2-x-6}$

9. $y=\dfrac{3x^2+10x-8}{x^2+4}$

ANSWERS

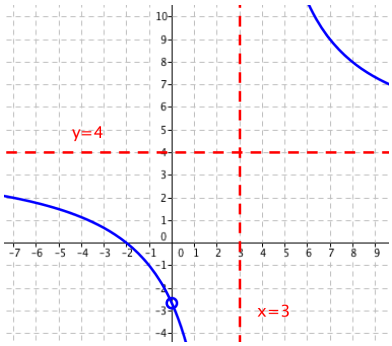
1.



D: $(-\infty,-3)\cup(-3,\infty)$

R: $(-\infty,0)\cup(0,\infty)$

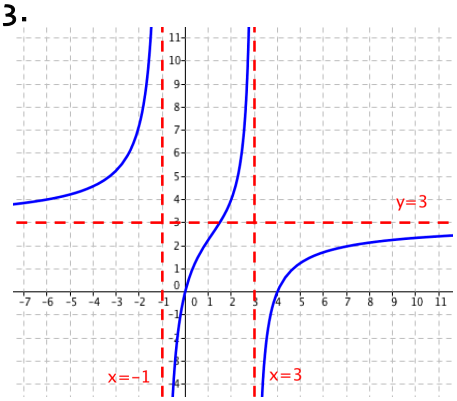
2.



D: $(-\infty,0)\cup(0,3)\cup(3,\infty)$

R: $\left(-\infty,-\frac{8}{3}\right)\cup\left(-\frac{8}{3},4\right)\cup(4,\infty)$

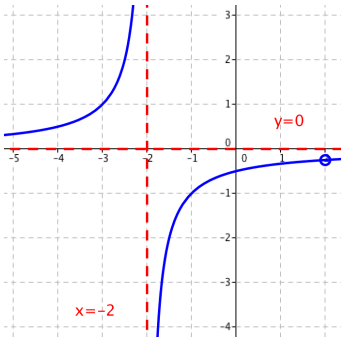
3.



D: $(-\infty,-1)\cup(-1,3)\cup(3,\infty)$

R: $(-\infty,\infty)$

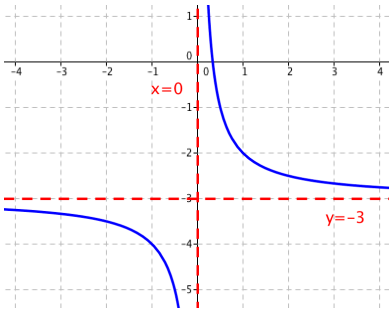
4.



D: $(-\infty,-2)\cup(-2,2)\cup(2,\infty)$

R: $\left(-\infty,-\frac{1}{4}\right)\cup\left(-\frac{1}{4},0\right)\cup(0,\infty)$

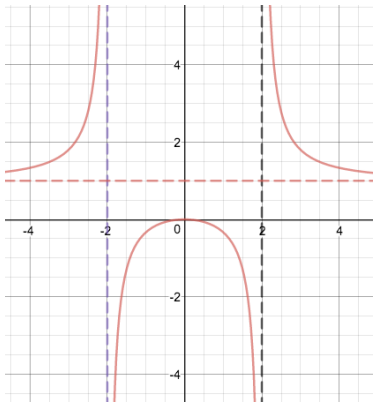
5.



D: $(-\infty,0)\cup(0,\infty)$

R: $(-\infty,-3)\cup(-3,\infty)$

6.



D: $(-\infty,-2)\cup(-2,2)\cup(2,\infty)$

R: $(-\infty,0)\cup(1,\infty)$

7. $\{x\,|\,x\neq\pm3\}$

8. $\left\{x\,\middle|\,x\neq-\frac{3}{2},2\right\}$

9. $\{x\,|\,x\ \varepsilon\ R\}$