Math 3 Name_____

Review Unit 4 Mod 8.1 & 9.1-9.2

Simplify each expression.

1) $\frac{2n-10}{5} \div \frac{2n-10}{n^2-25}$

$\frac{(n-5)(n+5)}{5}$

2) $\frac{x^2-1}{x^2+4x-5} \div \frac{2x^2+2x}{3x+15}$

$\frac{3}{2x}$

3) $\frac{5x^2+15x}{x^2+7x+12} \cdot \frac{x^2+8x+16}{x+4}$

$5x$

4) $\frac{5n^2-25n}{-n^2+8n-16} \cdot \frac{n^2-8n+16}{5n^2-25n}$

-1

5) $\frac{2k}{2k-4} - \frac{4}{3k+2}$

$\frac{3k^2-2k+8}{(k-2)(3k+2)}$

6) $\frac{2}{2n} - \frac{2}{3n-4}$

$\frac{n-4}{n(3n-4)}$

7) $\frac{3v}{6v+2} + \frac{4v}{2v}$

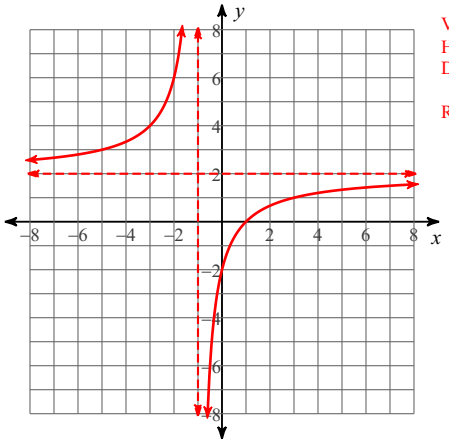
$\frac{15v+4}{2(3v+1)}$

8) $\frac{2x}{2x-8} + 3x$

$\frac{3x^2-11x}{x-4}$

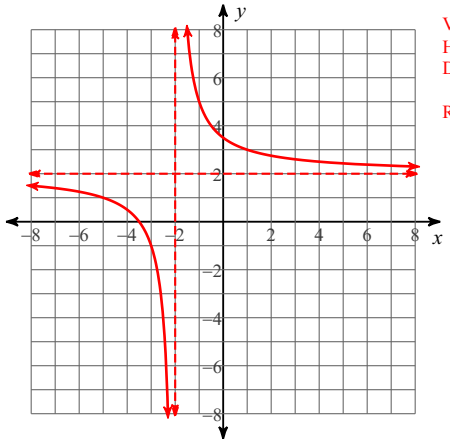
Identify the vertical asymptotes, horizontal asymptote, domain, and range of each. Then sketch the graph.

9) $f(x) = -\dfrac{4}{x+1} + 2$



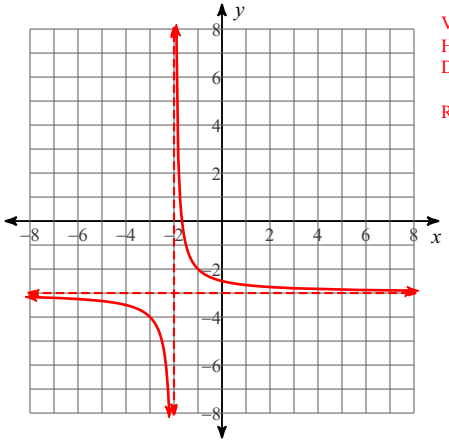
Vertical Asym.: $x = -1$
Horz. Asym.: $y = 2$
Domain:
All reals except -1
Range:
All reals except 2

10) $f(x) = \dfrac{3}{x+2} + 2$



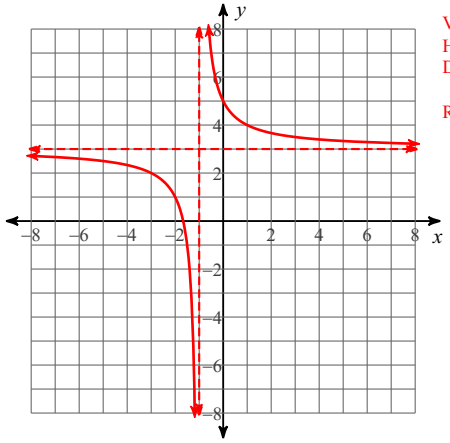
Vertical Asym.: $x = -2$
Horz. Asym.: $y = 2$
Domain:
All reals except -2
Range:
All reals except 2

11) $f(x) = \dfrac{1}{x+2} - 3$



Vertical Asym.: $x = -2$
Horz. Asym.: $y = -3$
Domain:
All reals except -2
Range:
All reals except -3

12) $f(x) = \dfrac{2}{x+1} + 3$



Vertical Asym.: $x = -1$
Horz. Asym.: $y = 3$
Domain:
All reals except -1
Range:
All reals except 3