Name_____ Group_____ /18

Functions: Rational Functions

(each question is worth 2 points)

1) Solve the following inequality: $\frac{3}{2x+4} \geq 0$

2) Given $f(x) = 3x + 6, g(x), g(x) = \frac{2x+4}{x-8}$ and $h(x) = g\big(f(x)\big)$
Determine the asymptotes of $h(x)$

3) What are the zero(s) for the following function: $f(x) = \frac{4x-6}{5x+2}$

4) Given $g(x) = \frac{7}{3x-6}$, solve for $g(14)$

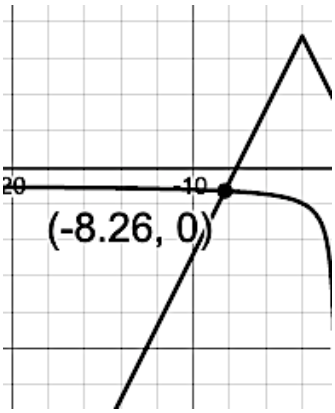
5) Find the rule of a rational function with asymptotes at $x = -5$ and $y = -2$ and an x-intercept of -3

6) Solve the following inequality: $-\frac{5}{2x+8} + 2 \geq x - 3$

7) An absolute value function and a rational function are shown below.

- The absolute value function has a rule of $f(x) = -2|x + 4| + 7.2$
- The rational function has asymptotes at $x = -2\ and\ y = -1$
- The rational function and the absolute value function intersect at $x = -8.26$

What is the rule of the rational function?



8) A rational function has the rule $g(x) = \frac{3x+2}{2x-5}$

What is the rule of $g^{-1}(x)$?

9) Given rational function $f(x) = -\frac{2}{2x+4} + 6$

Which of the following functions never intersects with $f(x)$?

C) $g(x) = 2|-3x - 30| - 5$

C) $i(x) = -2|-3x - 30| - 5$

B) $h(x) = 2\sqrt{-3x - 30} - 5$

D) $j(x) = -2\sqrt{-3x - 30} - 5$