

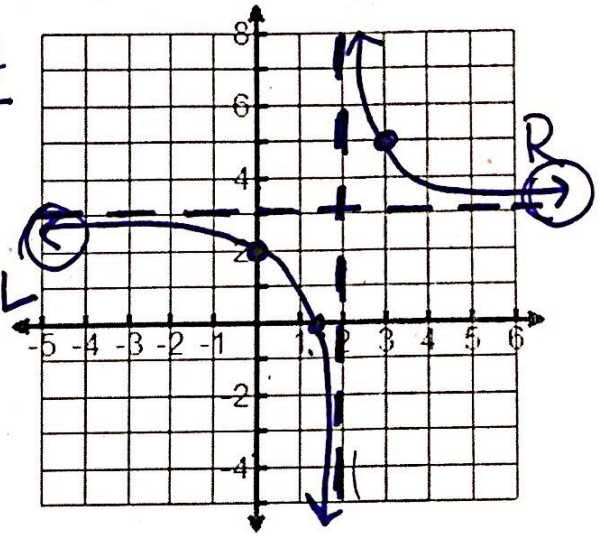
Name _____

Date _____

1. $f(x) = \frac{3x-4}{x-2}$
 Top x-int $(\frac{4}{3}, 0)$ $3x-4=0$
 $3x=4$
 y-int $(0, 2)$ $x = \frac{4}{3}$

Bottom VA $x=2$
 Deg. HA $y = \frac{3}{1} = 3$

Test: $\frac{3(3)-4}{3-2}$
 $\frac{5}{1}$
 $(3, 5)$

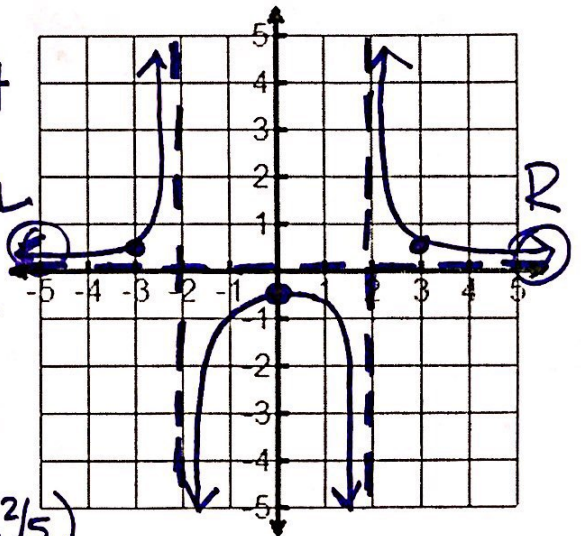


Domain All \mathbb{R} 's except $x \neq 2$ End Behavior: as $x \rightarrow \infty, f(x) \rightarrow 3$
 Range All \mathbb{R} 's except $y \neq 3$ as $x \rightarrow -\infty, f(x) \rightarrow 3$

2. $f(x) = \frac{2}{x^2-4} = \frac{2}{(x+2)(x-2)}$
 Top x-int NONE
 y-int $(0, -\frac{1}{2})$

Bottom VA $x = -2, 2$
 Deg. HA $y = 0$

Test: $\frac{2}{(-3)^2-4}$
 $\frac{2}{5}$
 $(-3, \frac{2}{5})$
 $\frac{2}{(3)^2-4}$
 $\frac{2}{5} (3, \frac{2}{5})$



Domain All \mathbb{R} 's except $x \neq -2, 2$ End Behavior: as $x \rightarrow \infty, f(x) \rightarrow 0$
 Range $(-\infty, -\frac{1}{2}] \cup (0, \infty)$ as $x \rightarrow -\infty, f(x) \rightarrow 0$

$$3. f(x) = \frac{x^2 + 2x - 15}{x^2 - 4} = \frac{(x+5)(x-3)}{(x+2)(x-2)}$$

x-int $(-5, 0)$ & $(3, 0)$

y-int $(0, \frac{15}{4})$ OR $(0, 3.75)$

VA $x = 2, -2$

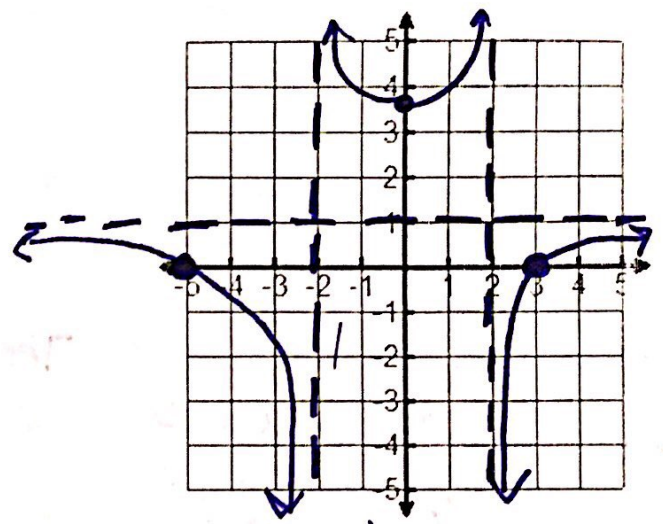
HA $y = 1$

Domain All IR's except $x \neq 2, -2$

End Behavior: as $x \rightarrow \infty, f(x) \rightarrow 1$

Range $(-\infty, 1) \cup [3.75, \infty)$

as $x \rightarrow -\infty, f(x) \rightarrow 1$



$$4. f(x) = \frac{5x - 5}{x + 2}$$

x-int _____

y-int _____

VA _____

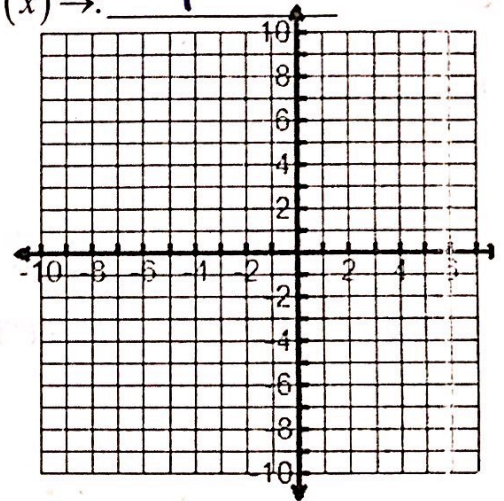
HA _____

Domain _____

End Behavior: as $x \rightarrow \infty, f(x) \rightarrow$ _____

Range _____

as $x \rightarrow -\infty, f(x) \rightarrow$ _____



$$5. f(x) = \frac{2}{x + 3}$$

x-int _____

y-int _____

VA _____

HA _____

Domain _____

End Behavior: as $x \rightarrow \infty, f(x) \rightarrow$ _____

Range _____

as $x \rightarrow -\infty, f(x) \rightarrow$ _____

