Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_FA Rational Functions Basic Vocabulary Period\_\_\_\_\_\_

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| Asymptotes (Mark all that apply)1. \_\_\_\_\_\_\_\_ Which type(s) of rational function have a horizontal asymptote?
	1. Any rational function that has a numerator whose degree is smaller than its denominator’s degree
	2. Any rational function that has a numerator whose degree is greater than its denominator’s degree
	3. Any rational function whose numerator’s degree is equal to its denominator’s degree
	4. none of these
2. \_\_\_\_\_\_\_ What causes a vertical asymptote?
	1. The roots of the numerator
	2. The roots of the denominator
	3. The x intercepts of the rational function
	4. The y intercept of the rational function
	5. The lead coefficients of the numerator and denominator
	6. The x axis
	7. None of these
3. \_\_\_\_\_\_\_ What causes a horizontal asymptote?
	1. The roots of the numerator
	2. The roots of the denominator
	3. The x intercepts of the rational function
	4. The y intercept of the rational function
	5. The lead coefficients of the numerator and denominator
	6. The x axis
	7. None of these
4. \_\_\_\_\_\_\_ Given $f\left(x\right)=\frac{2x+4}{3x-6}$, what is the horizontal asymptote?
	1. y = 0
	2. x = 0
	3. x = 2
	4. x = -2
	5. $y=\frac{2}{3}x$
	6. $y=\frac{2}{3}$
	7. $x=\frac{2}{3}$
	8. This rational function does not have a horizontal asymptote
	9. None of these
 | 1. \_\_\_\_\_\_\_ Given g$\left(x\right)=\frac{2x^{2}+4}{3x-6}$, what is the horizontal asymptote?
	1. y = 0
	2. x = 0
	3. x = 2
	4. x = -2
	5. $y=\frac{2}{3}x$
	6. $y=\frac{2}{3}$
	7. $x=\frac{2}{3}$
	8. This rational function does not have a horizontal asymptote
	9. None of these
2. \_\_\_\_\_\_\_ Given h$\left(x\right)=\frac{x^{2}-4}{3x^{2}-27}$, what is the horizontal asymptote?
	1. y = 0
	2. x = 0
	3. x = 2
	4. x = -2
	5. $y=\frac{1}{3}x$
	6. $y=\frac{1}{3}$
	7. $x=\frac{1}{3}$
	8. This rational function does not have a horizontal asymptote
	9. None of these
3. \_\_\_\_\_\_\_ Given j$\left(x\right)=\frac{2x^{2}-8}{8x^{3}-1}$, what is the horizontal asymptote?
	1. y = 0
	2. x = 0
	3. x = 2
	4. x = -2
	5. $y=\frac{1}{4}x$
	6. $y=\frac{1}{4}$
	7. $x=\frac{1}{4}$
	8. This rational function does not have a horizontal asymptote
	9. None of these
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| Asymptotes (Mark all that apply)1. \_\_\_\_\_\_\_ Given $f\left(x\right)=\frac{2x+4}{3x-6}$, what is the vertical asymptote?
	1. y = 0
	2. x = 0
	3. x = 2
	4. x = -2
	5. $y=\frac{2}{3}x$
	6. $y=\frac{2}{3}$
	7. $x=\frac{2}{3}$
	8. This rational function does not have a vertical asymptote
	9. None of these

Intercepts & AsymptotesDetermine the intercepts and asymptotes of each of the rational functions (if NONE, then state so)1. $f\left(x\right)=\frac{x^{2}-4}{3x-9}$

X intercept(s) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Y intercept \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Horizontal asymptote \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Vertical asymptote \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_1. $g\left(x\right)=\frac{4x+16}{x^{2}-25}$

X intercept(s) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Y intercept \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Horizontal asymptote \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Vertical asymptote \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_1. $h\left(x\right)=\frac{4x^{2}+16x}{x^{2}-16}$

X intercept(s) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Y intercept \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Horizontal asymptote \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Vertical asymptote \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | 1. $j\left(x\right)=\frac{x^{2}-8x-9}{3x-6}$

X intercept(s) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Y intercept \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Horizontal asymptote \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Vertical asymptote \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_1. $k\left(x\right)=\frac{x+1}{x^{2}-1x-12}$

X intercept(s) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Y intercept \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Horizontal asymptote \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Vertical asymptote \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_1. $m\left(x\right)=\frac{x^{2}+3x-10}{2x^{2}-10x}$

X intercept(s) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Y intercept \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Horizontal asymptote \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Vertical asymptote \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_1. $m\left(x\right)=\frac{x^{2}-3x-10}{2x^{2}-10x}$

X intercept(s) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Y intercept \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Horizontal asymptote \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Vertical asymptote \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_1. Explain why number 15 has a “hole” in its graph
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