Polynomial Test Review Even Answers

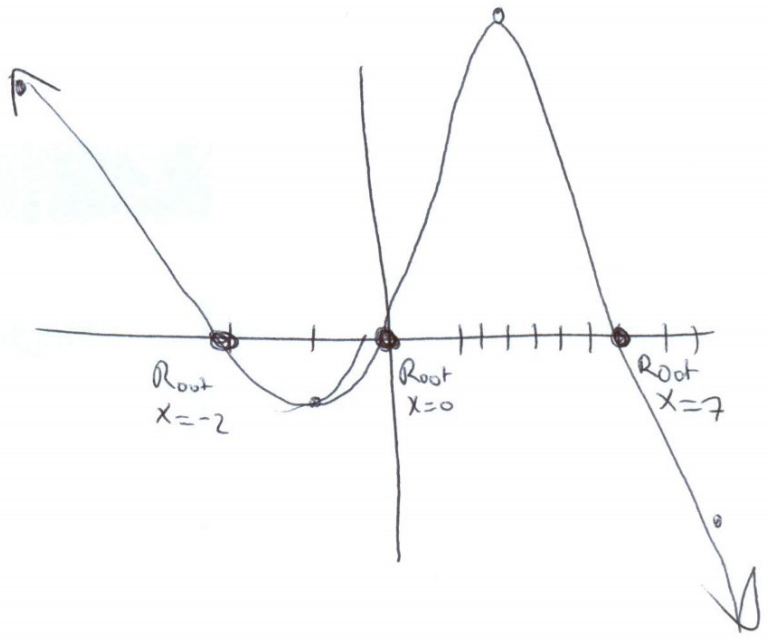
(2) $-x^3+5x^2+14x=0$

$-x(x^2-5x-14)=0$

$-x(x-7)(x+2)=0$

$x=0 \quad x=7 \quad x=-2$

Roots



Intermediate Values

x	y
-8	720
-1	-8
3	60
8	-80

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(4) $\frac{x}{x^2-3x-18}$

Vertical Asymptotes

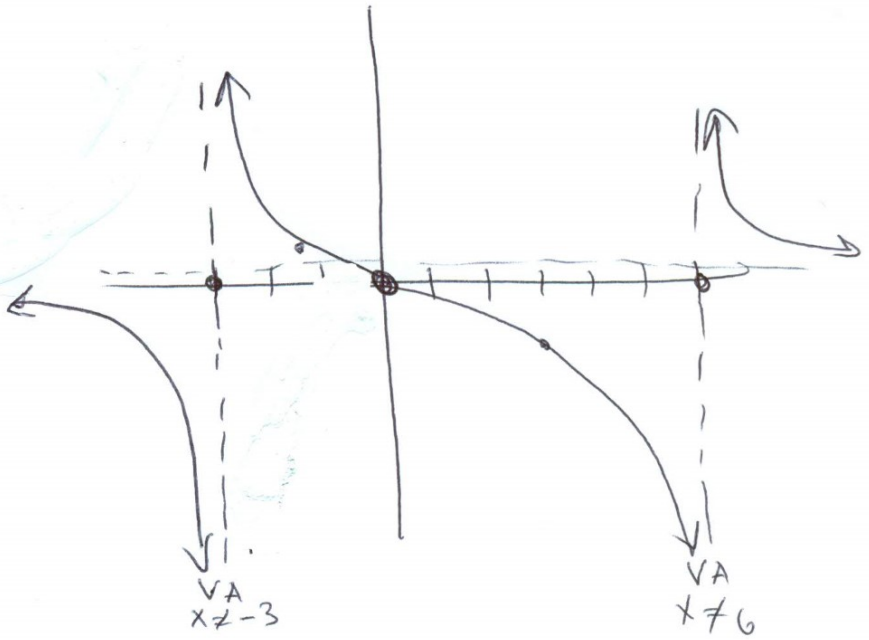
$x^2-3x-18 \neq 0$

$(x-6)(x+3) \neq 0$

$x \neq 6 \quad x \neq -3$

Horizontal Asymptotes

$\frac{x}{x^2}$ Bottom stronger $HA=0$



Root

$x=0$

Intermediate Values

x	y
-4	-4
	007143
-1	
	-1.667
3	
7	07

(c) $f(x) = \frac{3x^2 - 12x}{x^2 - 25}$

Vertical Asymptotes

$x^2 - 25 = 0$

$(x+5)(x-5) \neq 0$

$x \neq -5 \quad x \neq 5$

Horizontal

$\frac{3x^2}{x^2} = 3$

Roots:

$3x^2 - 12x = 0$

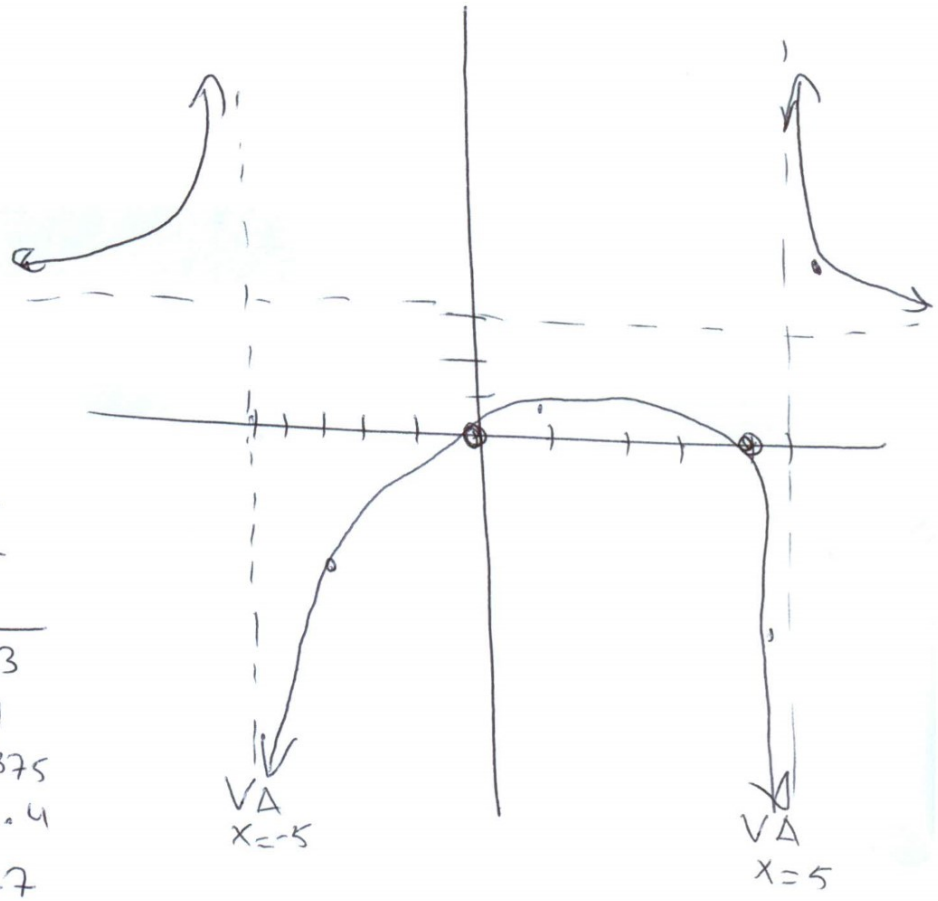
$3x(x-4) = 0$

$3x = 0 \quad x - 4 = 0$

$x = 0 \quad x = 4$

Intermediate Values

x	y
-6	16.3
-3	-4
1	.375
4.5	-1.4
6	3.7



(b) $f(x) = \frac{2x^2 - 5x + 5}{x - 2}$

Vertical Asymptote

$x \neq +2$

Roots

Not easily factorable
Ignore

H A

$\frac{2x^2}{x}$ None
Top is Stronger

Oblique

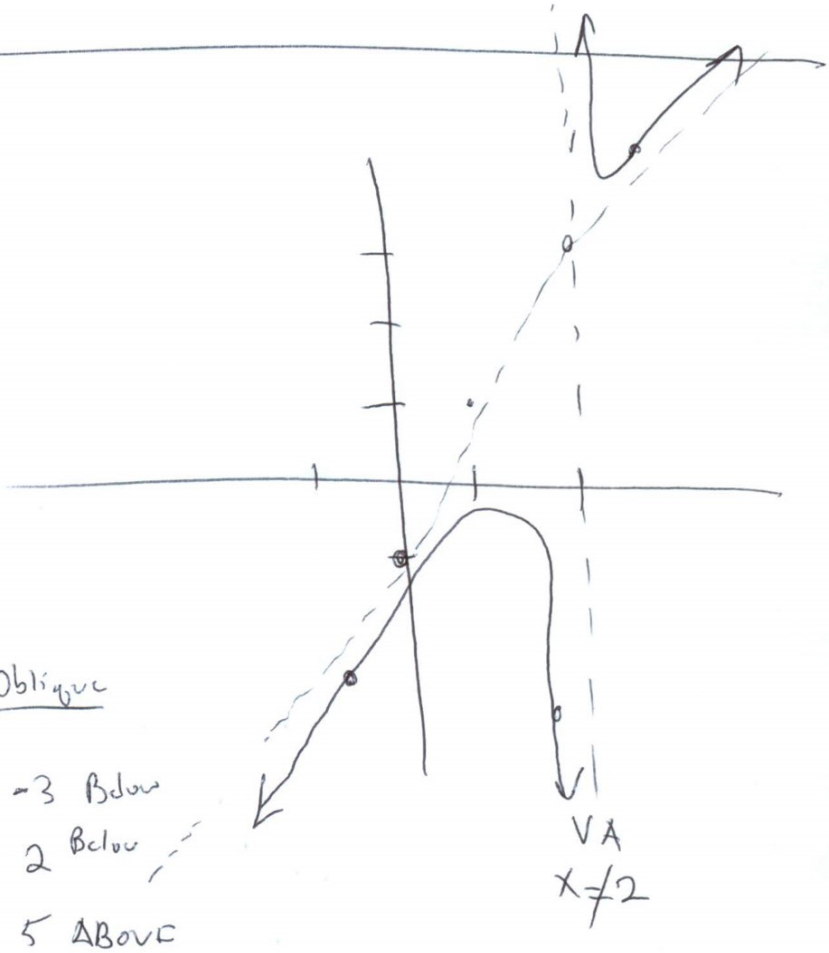
$2 \overline{)\ 2 \quad -5 \quad 5}$ (4, -2)

$2 \quad -1 \quad 3$

$y = 2x - 1$

Intermediate Values

x	y	Oblique
-1	-4	-3 Below
1.5	-4	2 Below
3	8	5 Above



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a) $\dfrac{x^3+9x^2-11x-5}{x+4}$

		−4	−20	124
−4	1	9	−11	−5
	1	5	−31	119

$x^2+5x-31+\dfrac{119}{x+4}$

b) $\dfrac{x^3+5x-4}{x-2}$

Don't forget $0x^2$!!!

		2	4	18
2	1	0	5	−4
	1	2	9	14

$x^2+2x+9+\dfrac{14}{x-2}$