Arellano Granados Angel Mariano 7/6/21

Tarea 12

① $h(x) = 9x^3 - 27x^2 + 4x + 4$

+ 4, 2, 1
- 9, 3, 1

$h(2) = 0$ $h(2/3) = 0$

$h(-1/3) = 0$

② $f(x) = 5x^3 + 4x^2 + 7x + 2$

+ 2, 1
- 5, 1

$\pm \frac{2}{5}, \pm 2, \pm \frac{1}{5}, \pm 1$

③ Si $x+3$ es un factor de $P(x) = x^4 + 2x^3 - x - 30$

$P(-3) = 0$ $x+3$ es un factor de $P(x)$

④ función cuyos ceros son 2 y 11

$f(x) = (x-2)(x-11)$

⑤ $y = x^2 - 12x + 20$

$(x-2)(x-10)$ ceros: 2, 10

⑥ $-2-i$, Si coeficiente grado 7

(a) Hallar otro cero

$-Si$

(b) max. de ceros reales

3

(c) max. de ceros no reales

6

⑦ $5x(x-16)^2(x-2)^2$

0, 16, 2

⑧ $g(x) = -6x^4 + 9x^3 - 4x^2 + 7x + 3$

RR+ = 3, 1 $f(x) = -\ +\ -\ +\ +\ 3, 1$

RR− = 1 $f(-x) = -\ -\ -\ -\ +\ 1$

⑨ $P(x) = x^3 - 10x^2 + 37x - 52$ dado que $3 - 2i$

$(x - 3 + 2i)(x - 3 - 2i)$ $3 + 2i$, 4

$$x^2 - 6x + 13 \overline{)\ x^3 - 10x^2 + 37x - 52}$$

$x - 4$

$(-)\ -x^3 + 6x^2 - 13x$

$0\ -4x^2 + 24x - 52$

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(10) Polinomio con ceros: 2, 4, -9, 0

$x(x-2)(x-4)(x+9)$

(11) $P(3)$ si $P(x) = 2x^3 - 5x^2 - 4$

Cociente = $2x^2 + x + 3$

Residuo = 5

$P(3) = 5$

3	2	-5	0	-4
		6	3	9
	2	+1	3	5

(12) $-3x^3 + 19x + 24 \;/\; x - 3$

3	-3	0	19	24
		-9	-27	-24
	-3	-9	-8	0

$-3x^2 - 9x - 8 + \frac{0}{x-3}$

(13) $g(x) = 7x^4 + 29x^3 - 32x^2 - 9x + 5$

$\pm \frac{5,1}{7,1}$

$g(1) = 0$

$g(-5) = 0$

1	7	29	-32	-9	5
		7	36	4	-5
-5	7	36	4	-5	0
		-35	-5	5	
	7	1	-7	0	

$7x^2 + x - 7$

$\frac{-1 \pm \sqrt{29}}{14}$

$1, -5, -\frac{1}{14} + \frac{\sqrt{29}}{14}, -\frac{1}{14} - \frac{\sqrt{29}}{14}$

(14) $f(x) = 4(x-5)(x-7)(x+9)^2(x+13)^3$

ceros de multiplicidad uno: 5, 7

ceros de multiplicidad dos: -9

ceres de multiplicidad tres: -13

(15) $h(x) = 5x^4 - 41x^3 + 44x^2 - 15x + 7$

$\pm \frac{7,1}{5,7}$

$h(1) = 0$

$h(7) = 0$

$5x^2 - x + 7$

$\frac{1 \pm \sqrt{-19}}{10} = \sqrt{19}i$

1	5	-41	44	-15	7
		5	-36	8	-7
7	5	-36	8	-7	0
		35	-7	7	
	5	-1	1	0	

$1, 7, \frac{1}{10} + \frac{\sqrt{19}i}{10}, \frac{1}{10} - \frac{\sqrt{19}i}{10}$