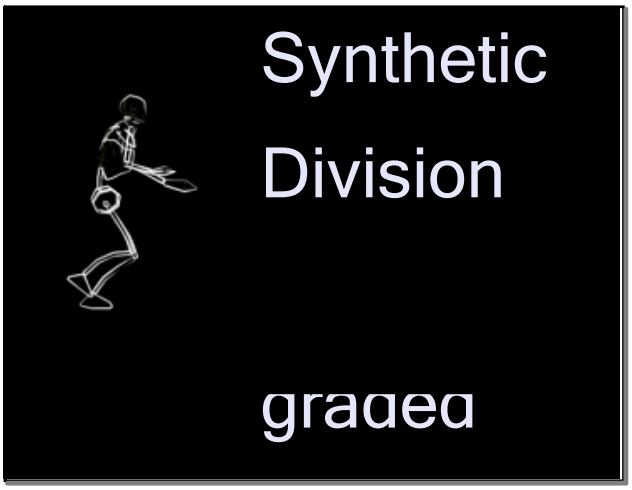

Oct 19-8:00 PM

P. 270

11) d 13) b 34) 3, multiplicity of 1 -3, multiplicity of 1
1, multiplicity of 1 -1, multiplicity of 1

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2) a) 6 b) 6 c) 5

4) a) 10 b) 10 c) 9

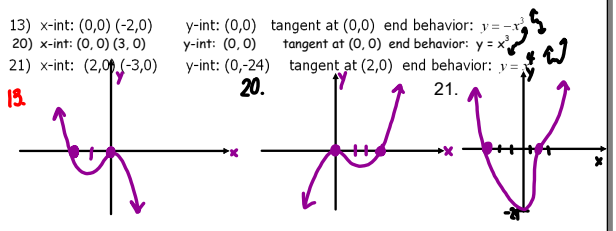
6) a) 4 b) 4 c) 3

7) d 8) a 9) f 10) c 11) b 12) e

13) x-int: (0,0) (-2,0) y-int: (0,0) tangent at (0,0) end behavior: $y=-x^3$
20) x-int: (0, 0) (3, 0) y-int: (0, 0) tangent at (0, 0) end behavior: $y=x^3$
21) x-int: (2,0) (-3,0) y-int: (0,-24) tangent at (2,0) end behavior: $y=$

$x^{10}-2x^5+4x-2$

19. 20. 21.



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$(x^4+4x^3+6x^2+4x+1)\div(x+1)$

Long Division:

$x+1\overline{)x^4+4x^3+6x^2+4x+1}$

x^3+3x^2+3x+1

$x^2(x+1)$ $-x^4+x^3$

$3x^3+6x^2$

$3x^2(x+1)$ $-3x^3+3x^2$

$3x^2+4x$

$3x(x+1)$ $-3x^2+3x$

$x+1$

$1(x+1)$ $-x+1$

0

Synthetic Division:

Coefficients

$-1\,|\,1\;4\;6\;4\;1$

$\downarrow\;-1\;-3\;-3\;-1$

$1\;3\;3\;1\;|\;0$

$+\downarrow$ $\times\searrow$

x^3+3x^2+3x+1

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Leave space for **all coefficients**

1. $(x^3+2x^2-5x-6)\div(x-2)$

$2\,|\,1\;2\;-5\;-6$

$\downarrow\;2\;8\;6$

$1\;4\;3\;|\;0$

x^2+4x+3

2. $(x^4-3x^2+6)\div(x+1)$

$x^4+0x^3-3x^2+0x+6$

$-1\,|\,1\;0\;-3\;0\;6$

$\downarrow\;-1\;1\;2\;-2$

$1\;-1\;-2\;2\;|\;4$

$x^3-x^2-2x+2+\frac{4}{x+1}$

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3. $(-y^6+4y^4+3y^2+2y)\div(y+2)$

$-y^6+0y^5+4y^4+0y^3+3y^2+2y+0$

$-2\,|\,-1\;0\;4\;0\;3\;2\;0$

$\downarrow\;2\;-4\;0\;0\;-6\;8$

$-1\;2\;0\;0\;3\;-4\;|\;8$

$-y^5+2y^4+3y-4+\frac{8}{y+2}$

4. $(x^2+1)\div(x+1)$

$-1\,|\,1\;0\;1$

$\downarrow\;-1\;1$

$1\;-1\;|\;2$

$x-1+\frac{2}{x+1}$

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Using synthetic division, determine whether the numbers are zeros of the polynomial function.

5. -3, 1 $f(x)=x^4+4x^3+2x^2-4x-3$

roots? zero remainder

$-3\,|\,1\;4\;2\;-4\;-3$

$\downarrow\;-3\;-3\;3\;3$

$1\;1\;-1\;-1\;|\;0$

yes

$-1\,|\,1\;4\;2\;-4\;-3$

$\downarrow\;1\;5\;7\;3$

$1\;5\;7\;3\;|\;0$

yes

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Homework:

pg 291:

12, 16, 19, 32, 34

Quiz Thursday

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Oct 22-9:16 AM