

P. 270

Tonight: Graph #s 13, 20 & 21 on graph paper

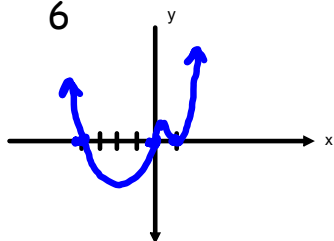
12) a 14) c 16) b 18) d

22) 1, -2 are roots, 3 is not a root

29)

R	M	T/C
0	3	C
1	2	T
-4	1	C

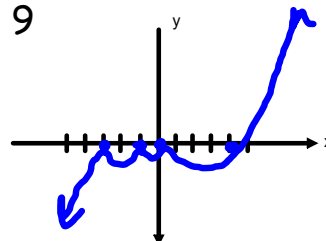
6



30)

R	M	T/C
0	2	T
-3	2	T
4	1	C
-1	4	T

9



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$$16) \text{ } f(x) = -x^3 + x^5 \quad (-.5x^6)$$

→
-x even

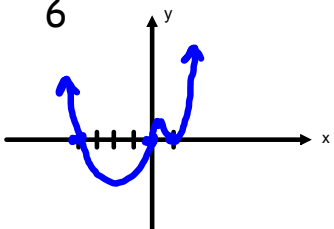
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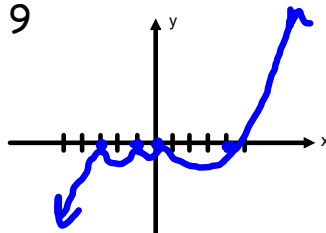
6



30)

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9



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Graphing Polynomial Functions

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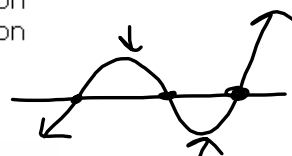
Steps:

1. determine end behavior
2. find zeros & multiplicity
(determine if tangent or cross)
3. find a point in each region
4. find y-intercept
5. sketch

For each problem:

1. Determine
 - a. maximum # of real zeros
 - b. maximum # of x-intercepts
 - c. maximum # of turning points
2. Graph using the steps outlined above.

$= \text{deg}$
 $= \text{deg}$
 $\text{deg} - 1$



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Examples 1 2 2 $\rightarrow$ deg = 5

1. $f(x) = -x(x+1)^2(x-2)^2$

a)

b)

c)

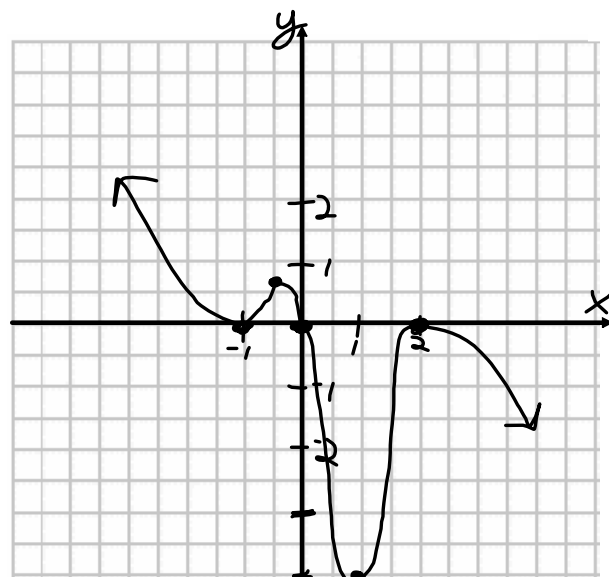
R	M	T/C
0	1	C
-1	2	T
2	2	T

$$f(-\frac{1}{2}) = -(-\frac{1}{2})(-\frac{1}{2}+1)^2(-\frac{1}{2}-2)^2$$

$$= -\frac{1}{2}(\frac{1}{4})(\frac{25}{4}) = -\frac{25}{32}$$

$$f(1) = -1(1+1)^2(1-2)^2 = -1(2)^2(-1)^2 = -1(4)(1) = -4$$

y-int, set $x=0$
root 0, (0,0)



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2. $f(x) = -x(x-2)^2(x+3)$

a) max # zeros: 4

b) max # x-ints: 4

c) " " turn.pts: 3

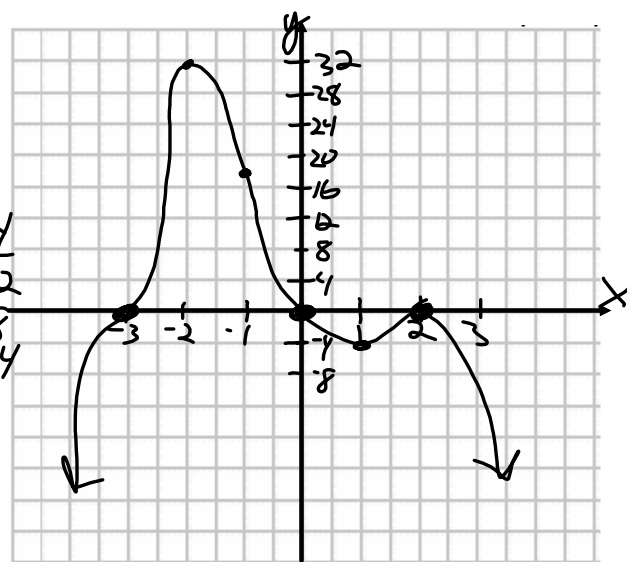
R	M	T/C
0	1	C
2	2	T
-3	1	C

$$f(-2) = -(-2)(-2-2)^2(-2+3) = 2(-4)^2(1) = 2(16)(1) = 32$$

$$f(-1) = -(-1)(-1-2)^2(-1+3) = 1(9)(2) = 18$$

$$f(1) = -1(1-2)^2(1+3) = -1(1)(4) = -4$$

y-int = (0,0)



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3. $f(x) = \frac{x^3 + 2x^2 - x - 2}{x^2 - 1}$

$$f(x) = x^2(x+2) - 1(x+2)$$

$$f(x) = (x+2)(x^2-1)$$

$$f(x) = (x+2)(x+1)(x-1)$$

R	m	r/c
-2	1	c
-1	1	c
1	1	c

$$\frac{1}{3} \rightarrow +x^{\text{odd}}$$

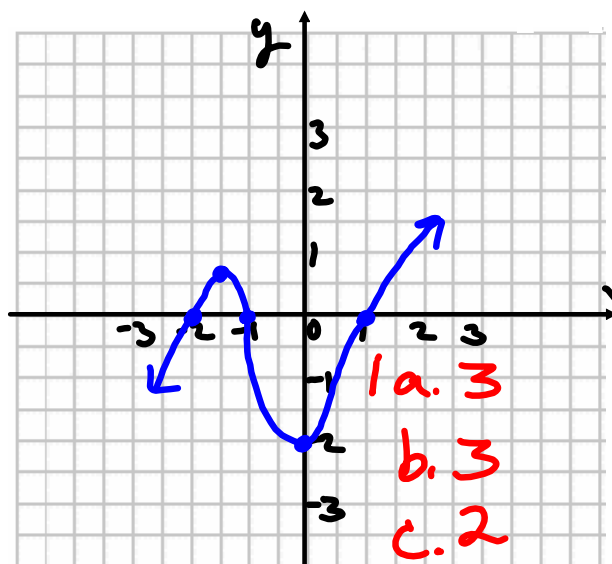
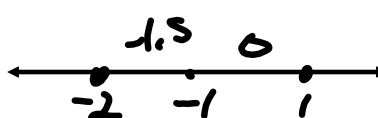
$$f(-\frac{3}{2}) = (-\frac{3}{2}+2)(-\frac{3}{2}+1)(-\frac{3}{2}-1)$$

$$f(\frac{3}{2}) = (\frac{3}{2})(-\frac{1}{2})(-\frac{3}{2})$$

$$f(-\frac{3}{2}) = +\frac{5}{8}$$

$$f(0) = -2$$

x	y
-1.5	5/8
0	-2



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HW: P. 283 # 2, 4, 6, 7 - 12

(do without calculator)

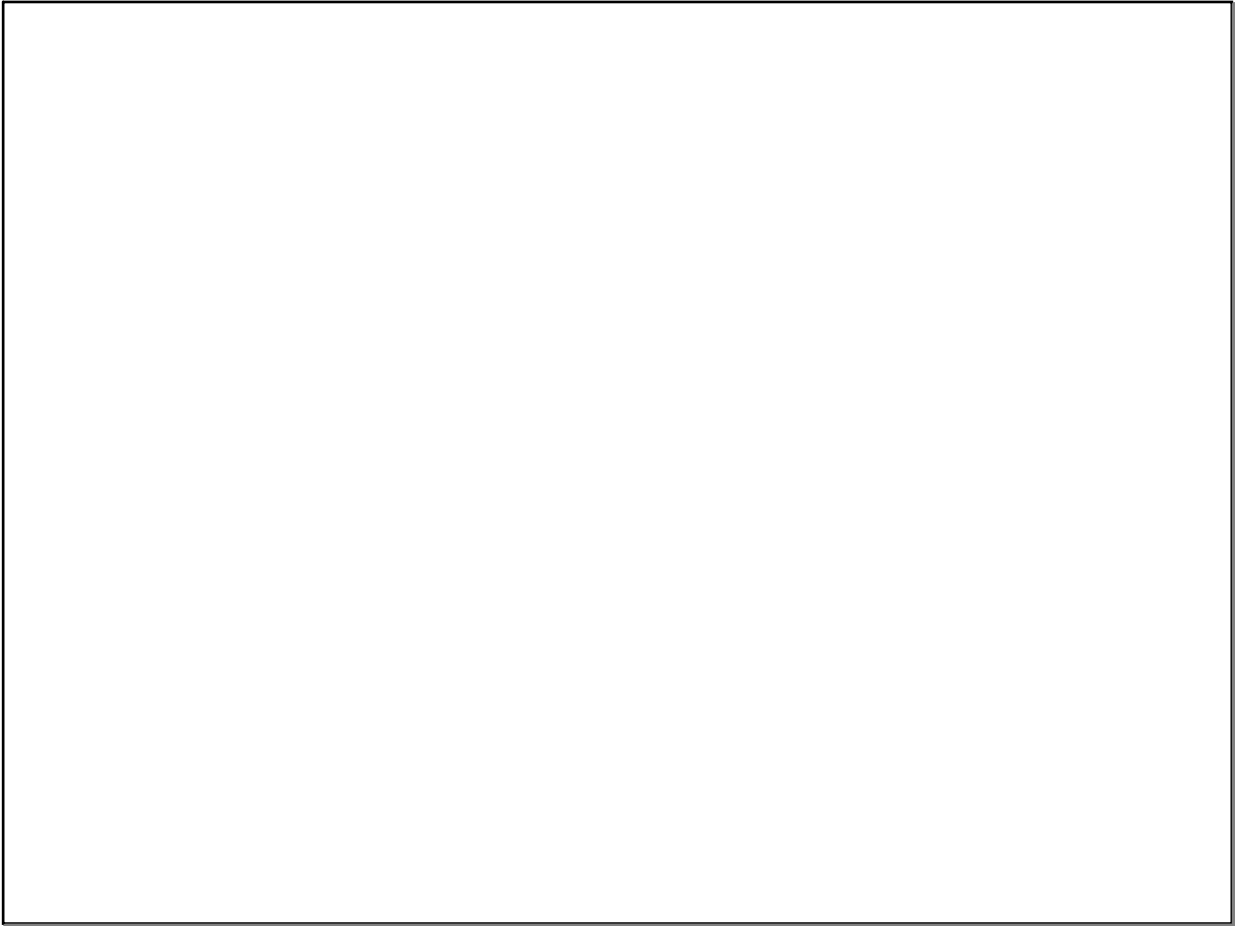
13, 20, 21 (on gr. paper)

P. 270 # 11, 13, 34

Graded due Monday

Quiz Thurs No Calc.

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