

pg 205 # 1-10  
 # 11-25 odd  
 # 28-40 Even # 63

pg 266-67 # 1, 5, 13, 15, 27, 31

- 1) yes 2) yes 3) yes 4) yes 5) no 6) yes  
 7) no 8) no 9) yes 10) no

11.)  $f(x) = (x+1)(x-1)(x-3)$

13.)  $f(x) = (x+3)x(x-4)$

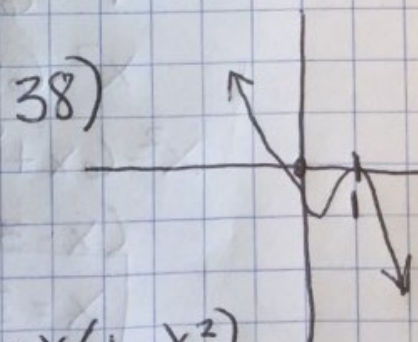
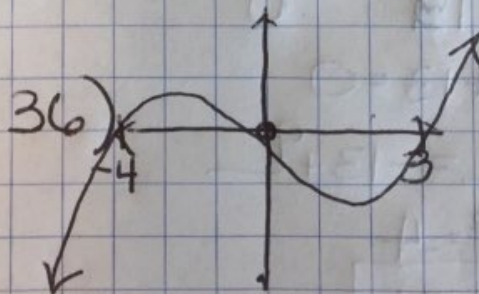
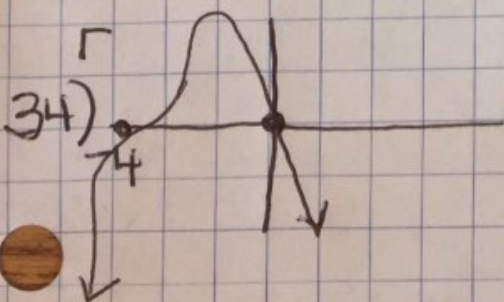
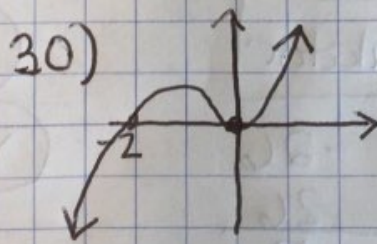
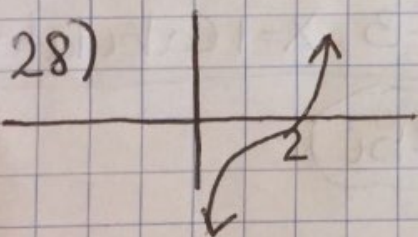
15.)  $f(x) = (x+4)(x+1)(x-2)(x-3)$

17.)  $x=7$   $x=-3$  M2  
 Crosses touches  
 not Crosses

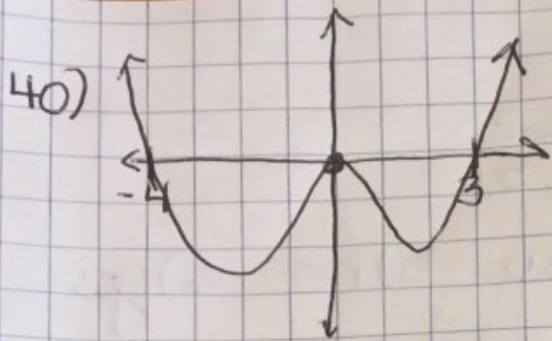
19.)  $x=\pm i$   $x=2$  M3  
 Never Crosses

21.)  $x=-\frac{1}{2}$   $x=\pm 2i$  M2  $x=5$  M3  $x=-4$  M2  
 touches Never Crosses touches

25.)  $x=\pm 2i\sqrt{2}$   $x=\pm 3i$  M2  $\Rightarrow$  no real  
 Never Never



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



63a)  $f(x) = x(x-1)(x-2)$

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

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

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

pg 266 # 1, 5, 13, 15, 27, 31

1.) Given  $x = 3$   $x = 4-i$   
 $x = 4+i$

5.) Given  $x = 1$   $x = i$   $x = 2i$   
 $x = -i$   $x = -2i$

13.)  $x = 2$   $x = -i$   $x = i$   $x = 1+i$   $x = 1-i$

$$f(x) = x^5 - 4x^4 + 7x^3 - 8x^2 + 6x - 4$$

15.)  $x = 3$   $x = 3$   $x = -i$   $x = i$

$$f(x) = x^4 - 6x^3 + 10x^2 - 6x + 9$$

27.)  $f(x) = x^3 - 8x^2 + 25x - 26$

$x = 2 \rightarrow$  Calculator

$$\begin{array}{r|rrrr} 2 & 1 & -8 & 25 & -26 \\ & & 2 & -10 & 26 \\ \hline & 1 & -6 & 19 & 0 \end{array}$$

$$x^2 - 6x + 13 = 0$$

$$x^2 - 6x + 9 = -13 + 9$$

$$(x-3)^2 = -4$$

$x = 3 \pm 2i$

31.)  $f(x) = x^4 + 2x^3 + 22x^2 + 50x - 75$

$x = -3$   $x = 1$  Calculator

$x = \pm 5i$