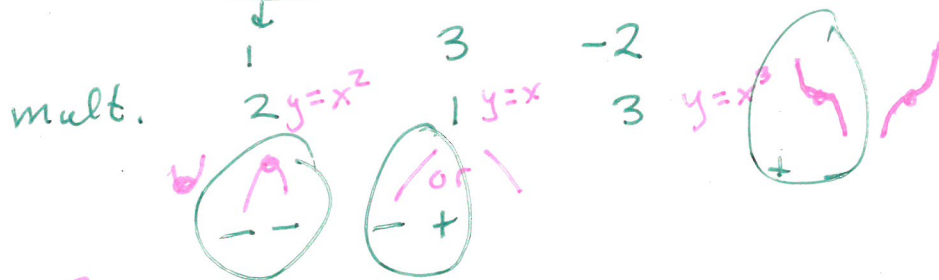
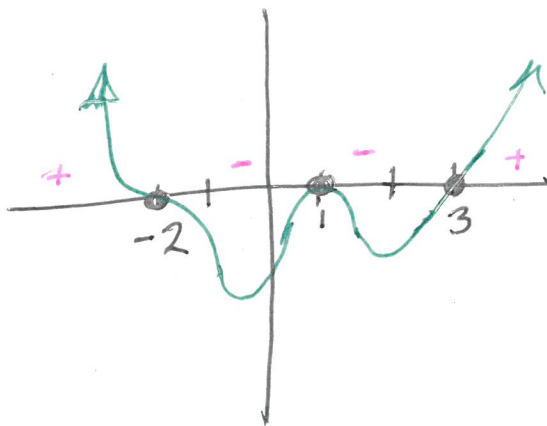


Quiz 3.4

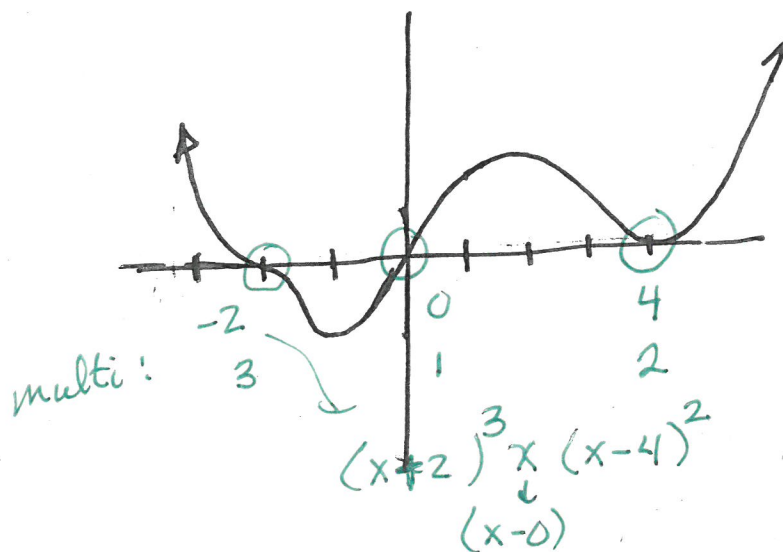
1. Graph $f(x) = (x-1)^2 (x-3) (x+2)^3$



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

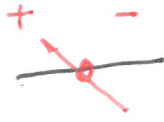
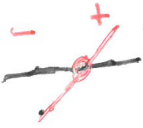


2. Write an equation with graph



Zeros:

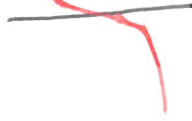
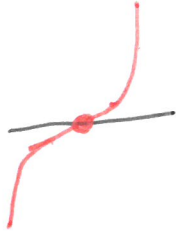
mult. 1



mult. 2
(mult. 4)

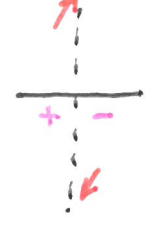


mult 3
(or 5)



Vertical asymptotes

mult 1
(3,5)



mult 2
(4,6)



$$y = \frac{(2x+1)(x-2)^2}{(1-x)(x-4)^2}$$

$$Z^0: -\frac{1}{2}, 2$$

$$(m^1, m^2)$$

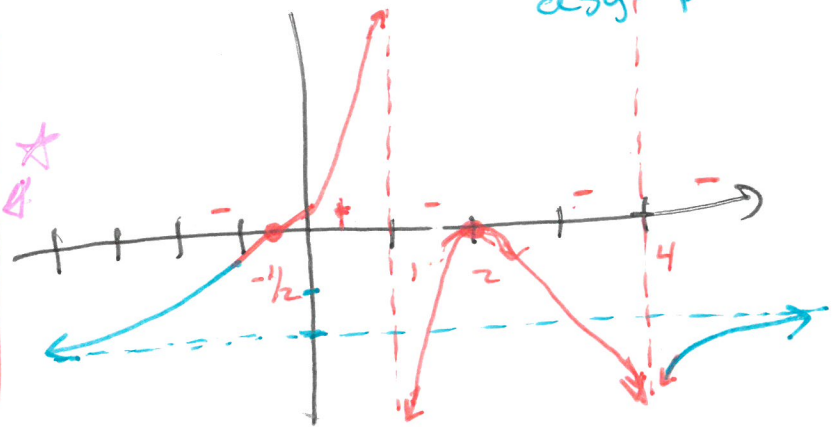
$$y = \frac{2x \cdot x^2}{-x \cdot x^2} = -2$$

$$VA: 1, 4$$

$$(m^1, m^2)$$

$y = -2$
Horizontal asymptote

	$-\frac{1}{2}$	1	2	4
$(2x-1)$	-	+	+	+
$(x-2)^2$	+	+	+	+
$(1-x)$	+	-	-	-
$(x-4)^2$	+	+	+	+
	=	+	-	-



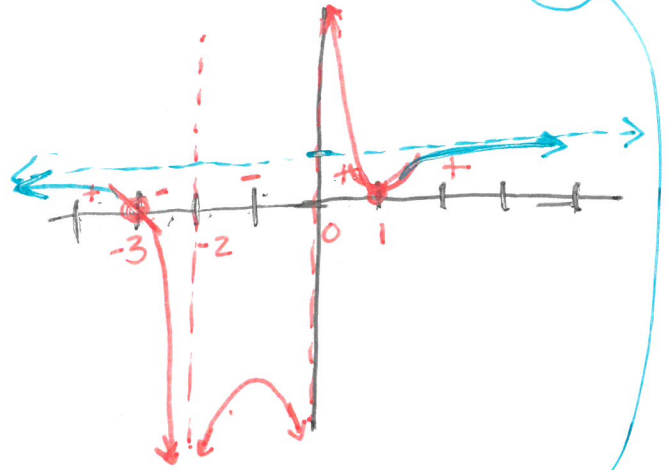
$$y = \frac{(x-1)^2 (x+3)}{x (x+2)^2}$$

zeros 1 -3
mult 2 1

vertical asymptotes 0 -2
1 2

$$y = \frac{x^2 \cdot x}{x \cdot x^2} = \frac{x^3}{x^3} = 1$$

	-3	-2	0	1	
$(x-1)^2$	+	-	+	+	+
$(x+3)$	-	+	+	+	+
x	-	-	-	+	+
$(x+2)^2$	+	+	+	+	+
	+	-	-	+	+



End

end behavior $y=1$

End behavior

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

$$y = \frac{x}{2x \cdot x} = \frac{1}{2x} \rightarrow 0$$

horizontal asymptote

$$\underline{y=0}$$

3.5# 61, 63, 67, 71, 77, 79, 83
★