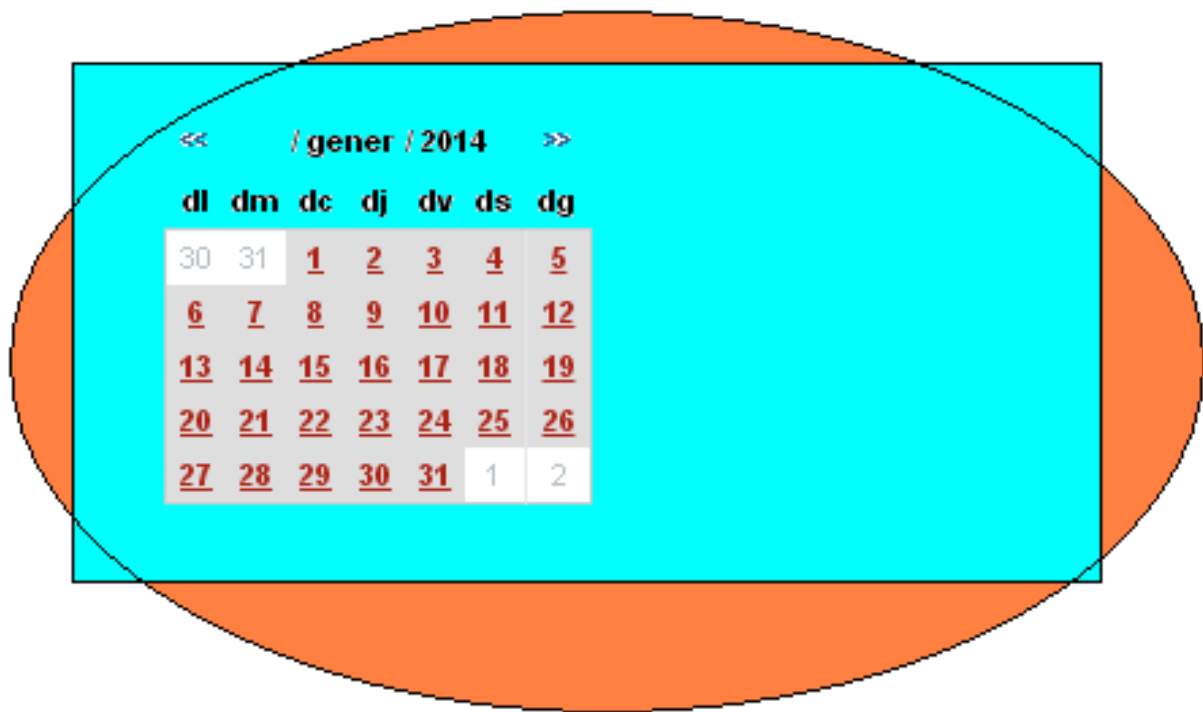
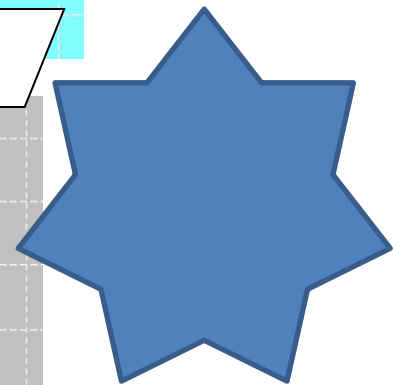
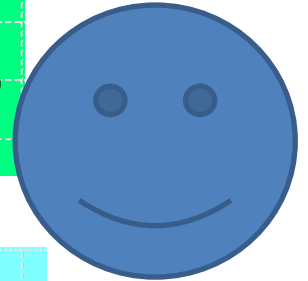
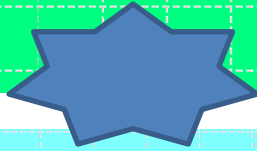
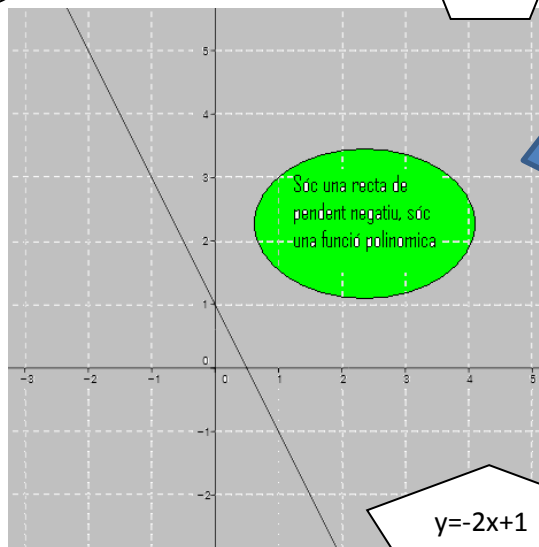
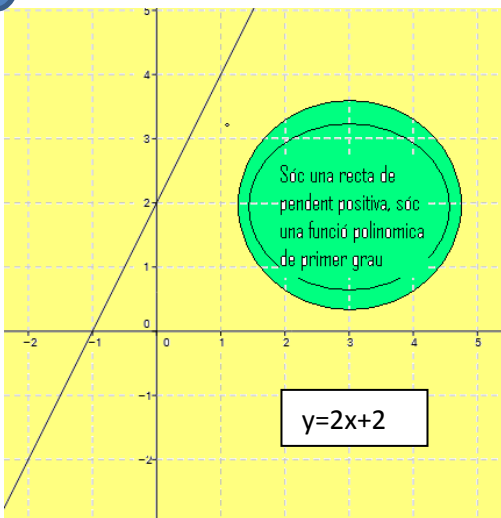
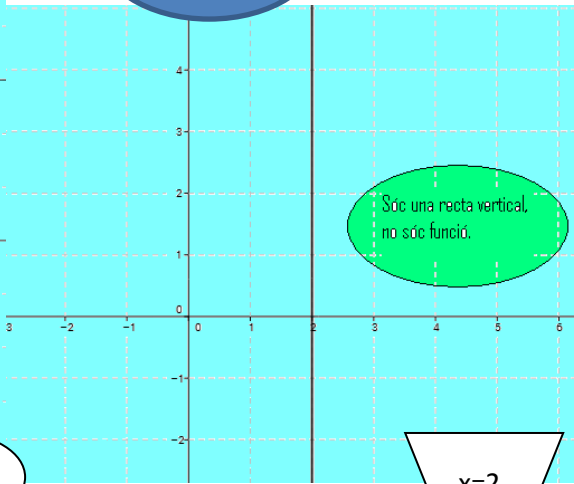
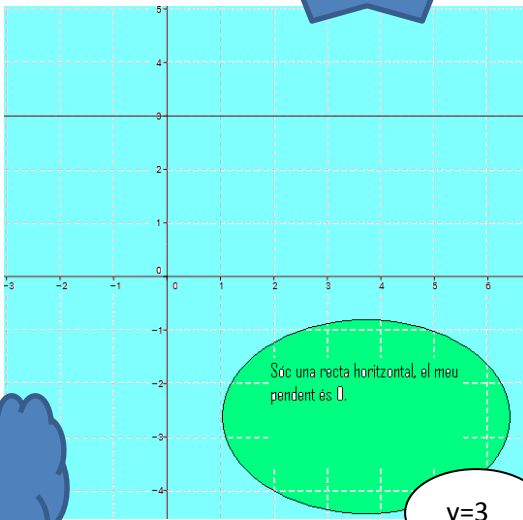
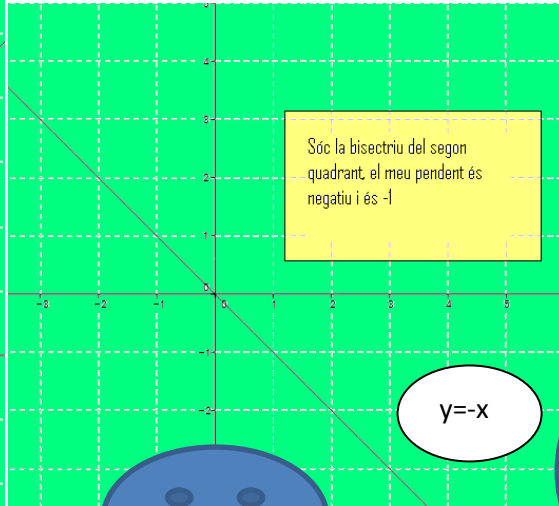
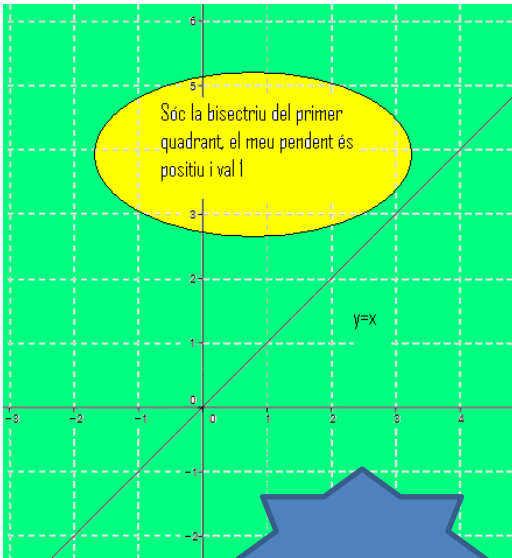


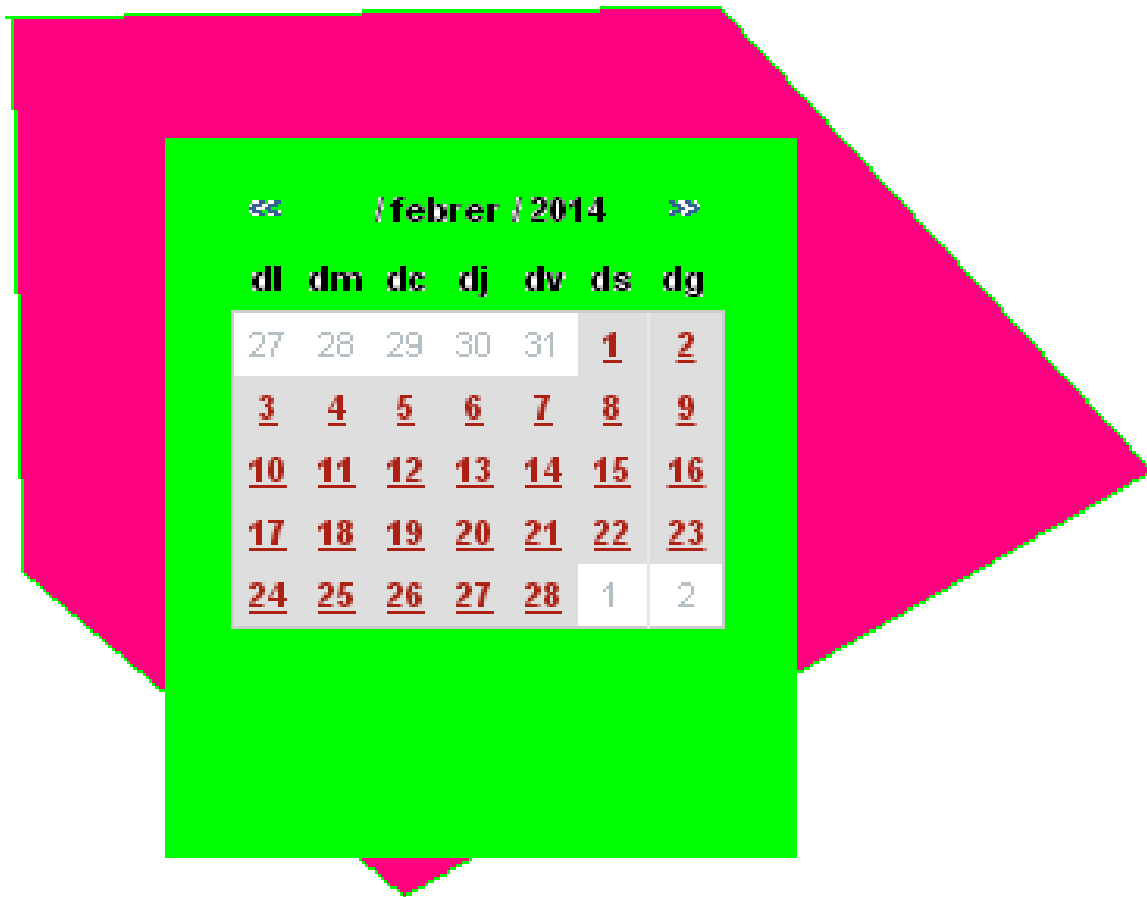
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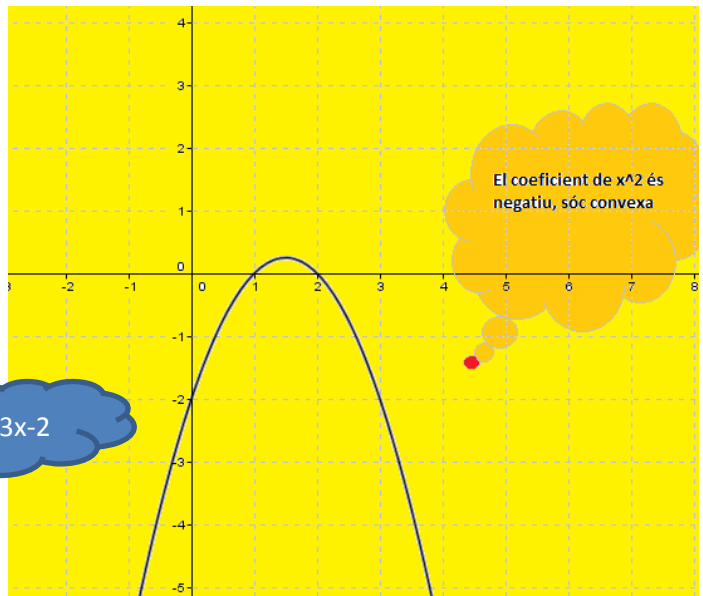
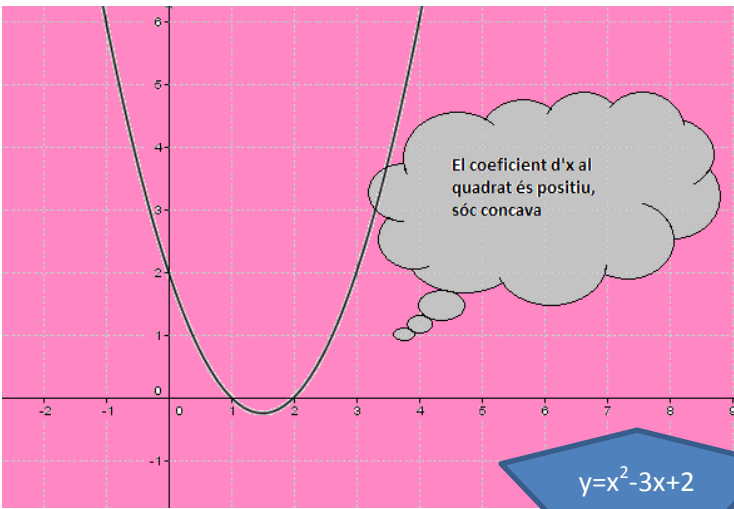
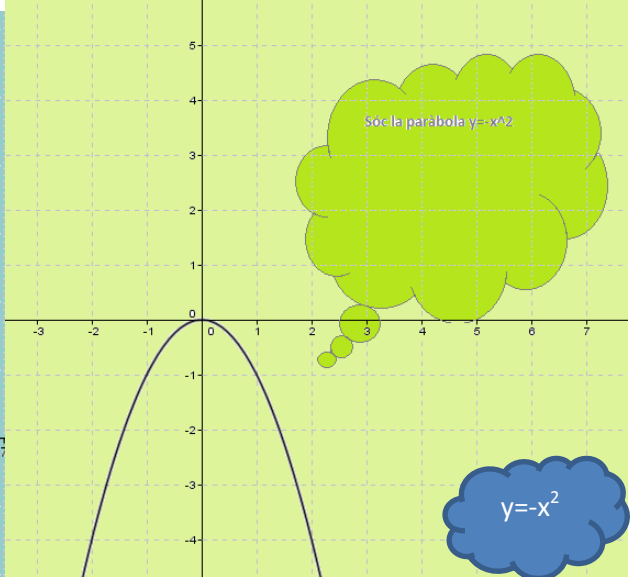
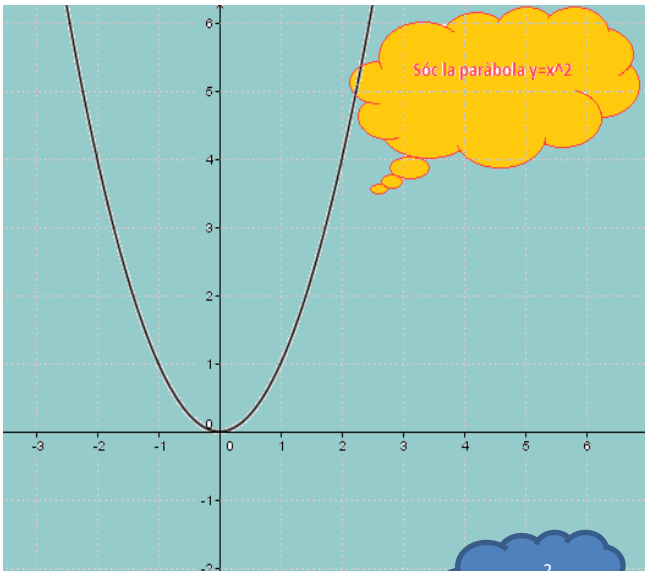


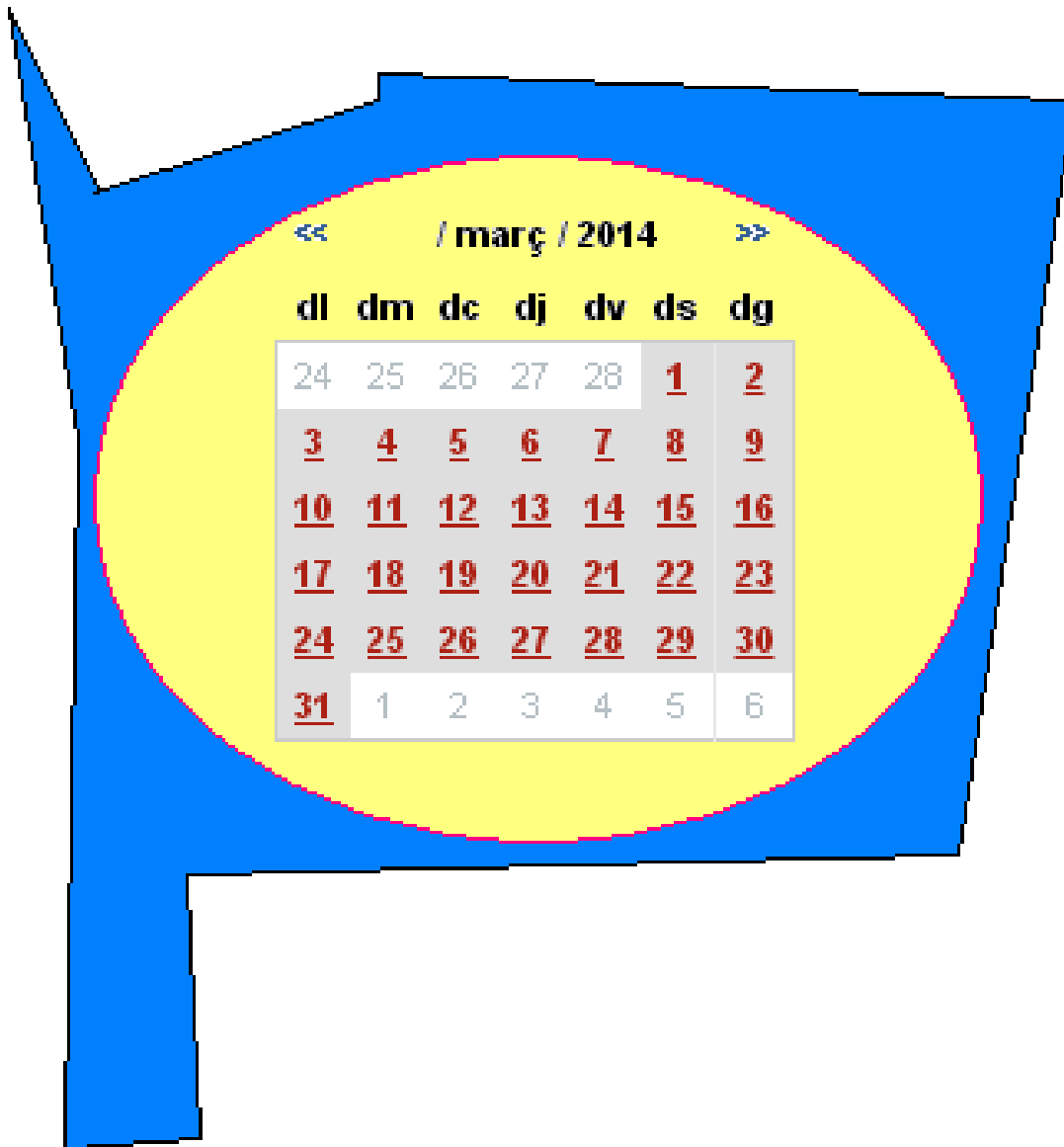
Les rectes són la representació gràfica de les funcions polinòmiques de primer grau.



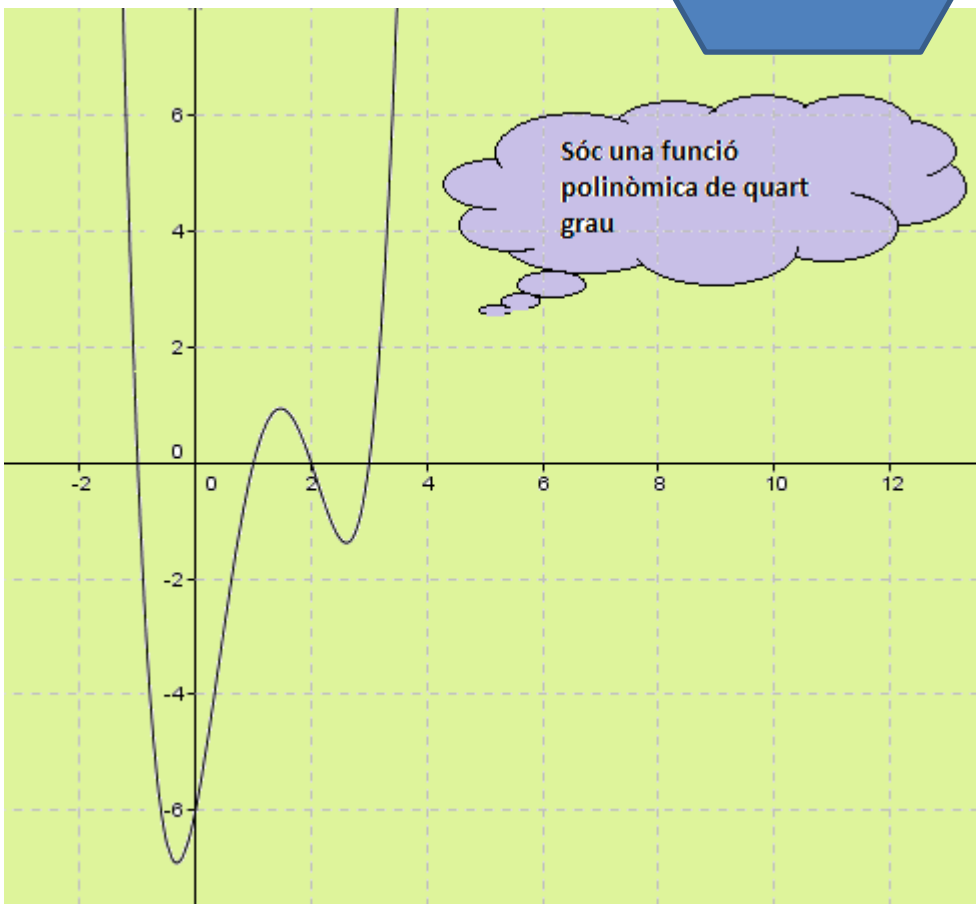
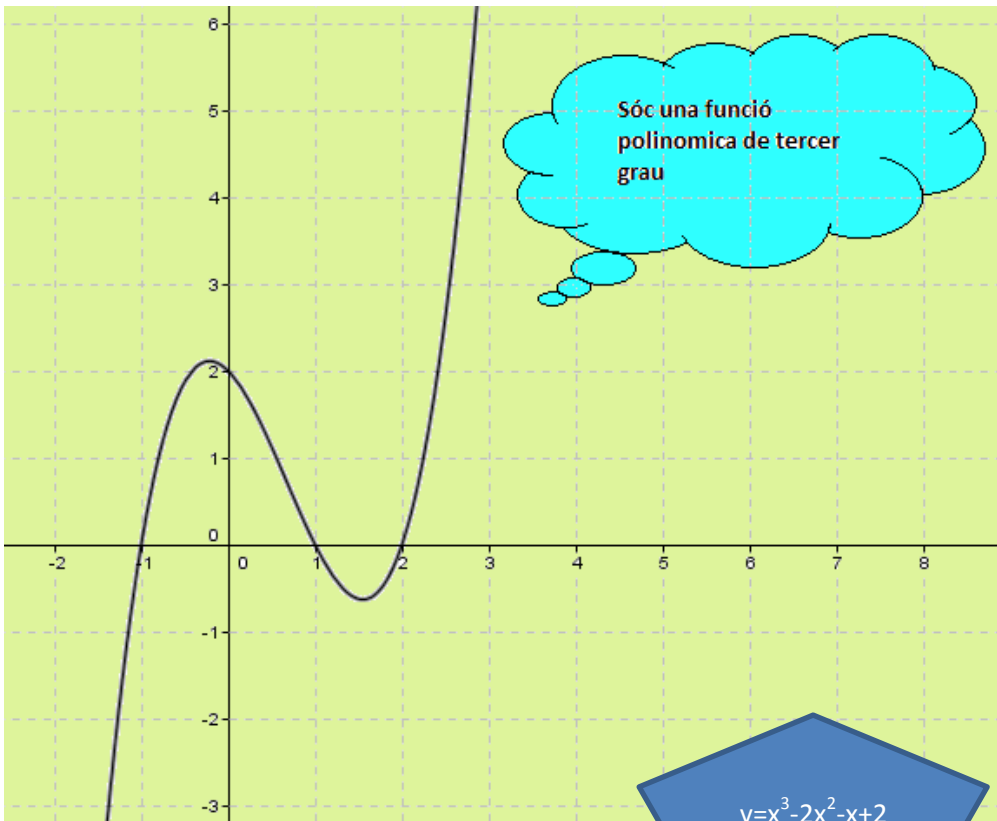


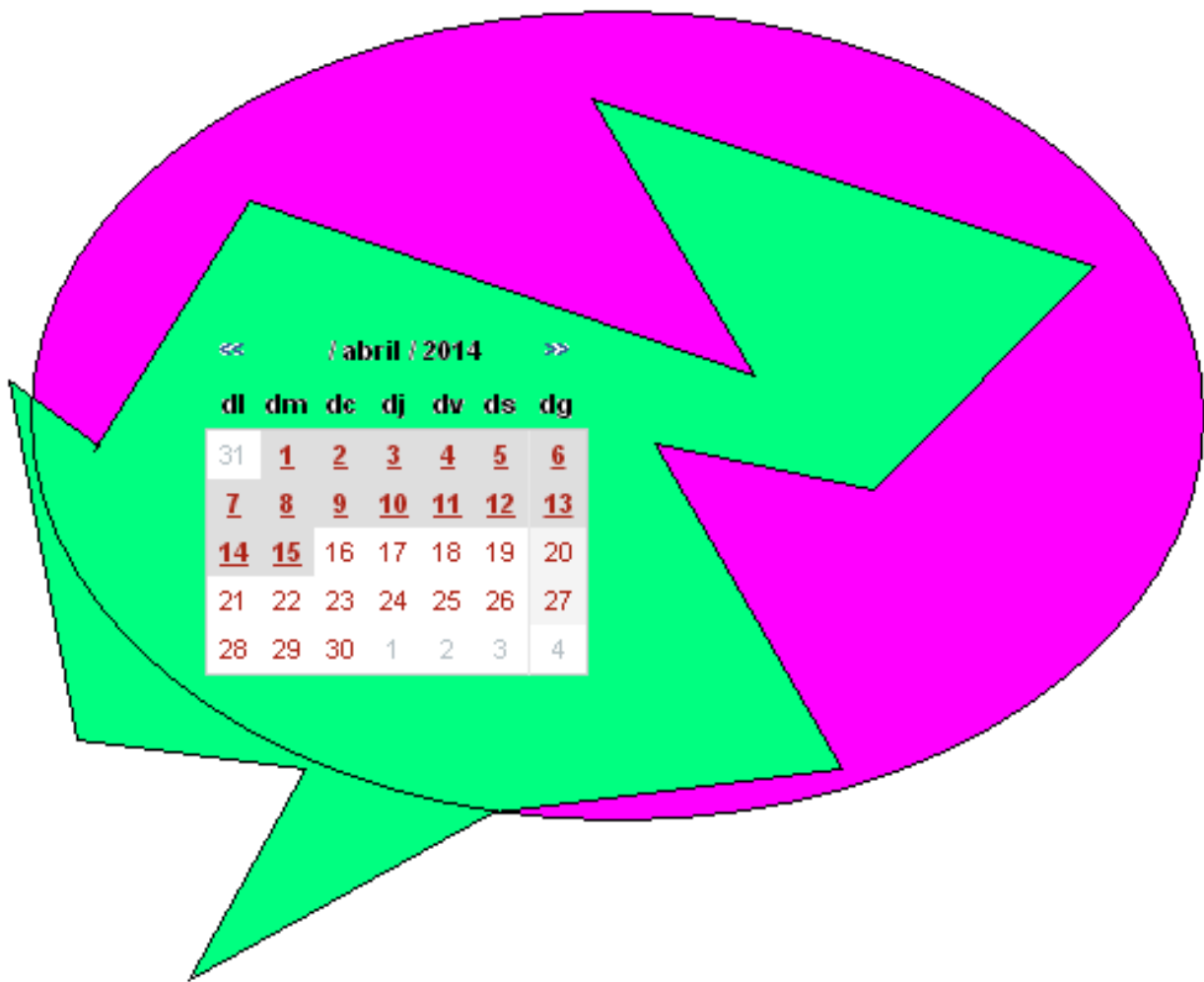
*Les paràboles són la representació geomètrica de les funcions de segon grau*





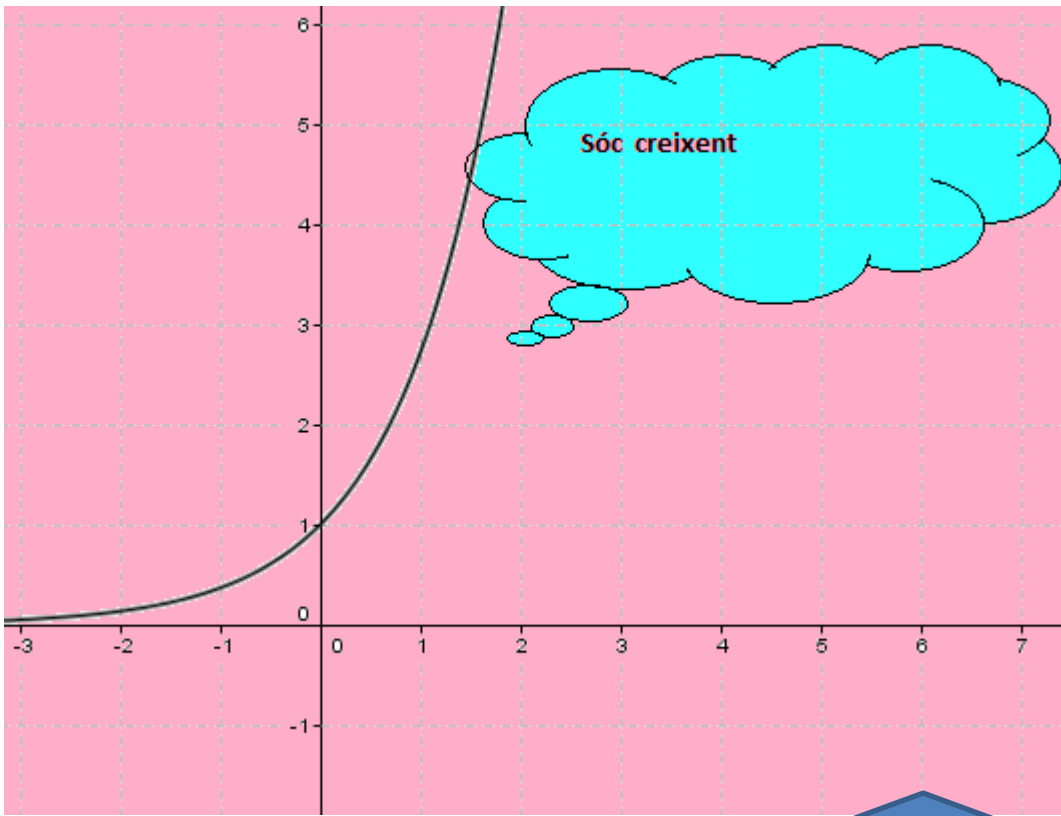
Les funcions polinòmiques de grau superior a dos tenen per representació gràfica corbes contínues



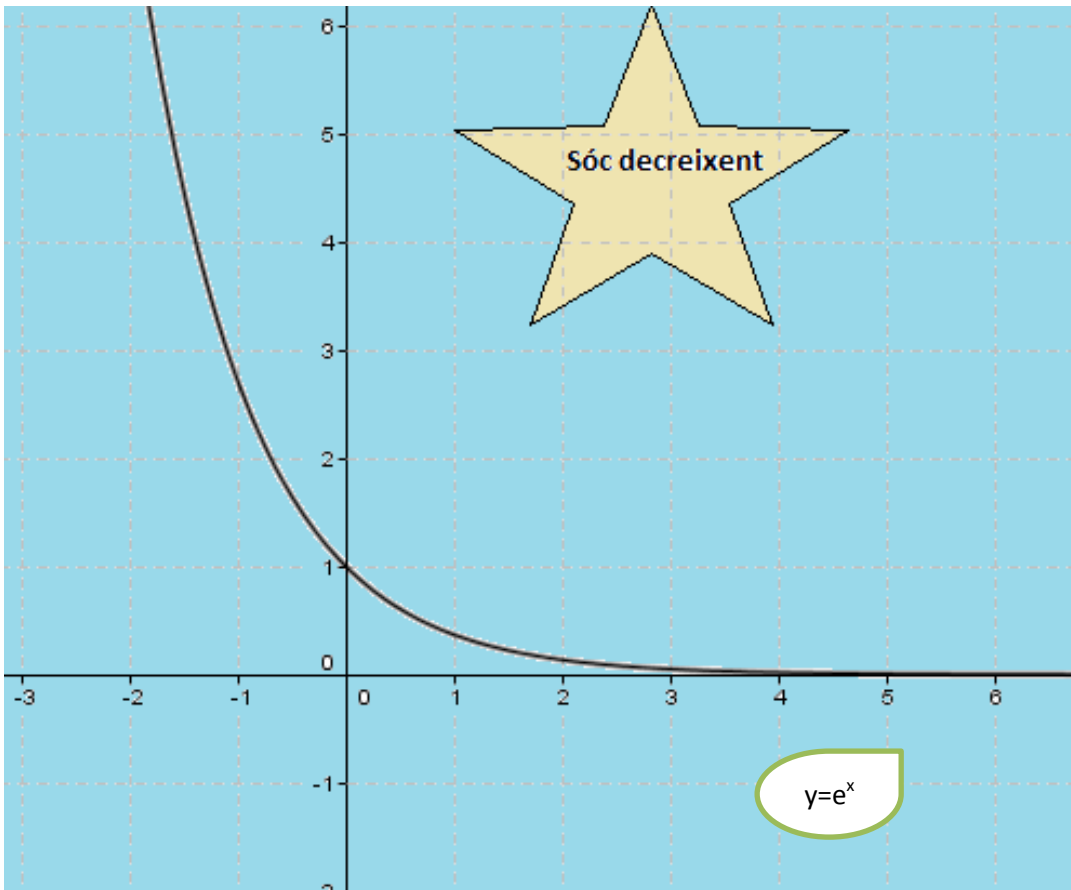


*Les funcions exponencials són les que creixen o decreixen més ràpidament*

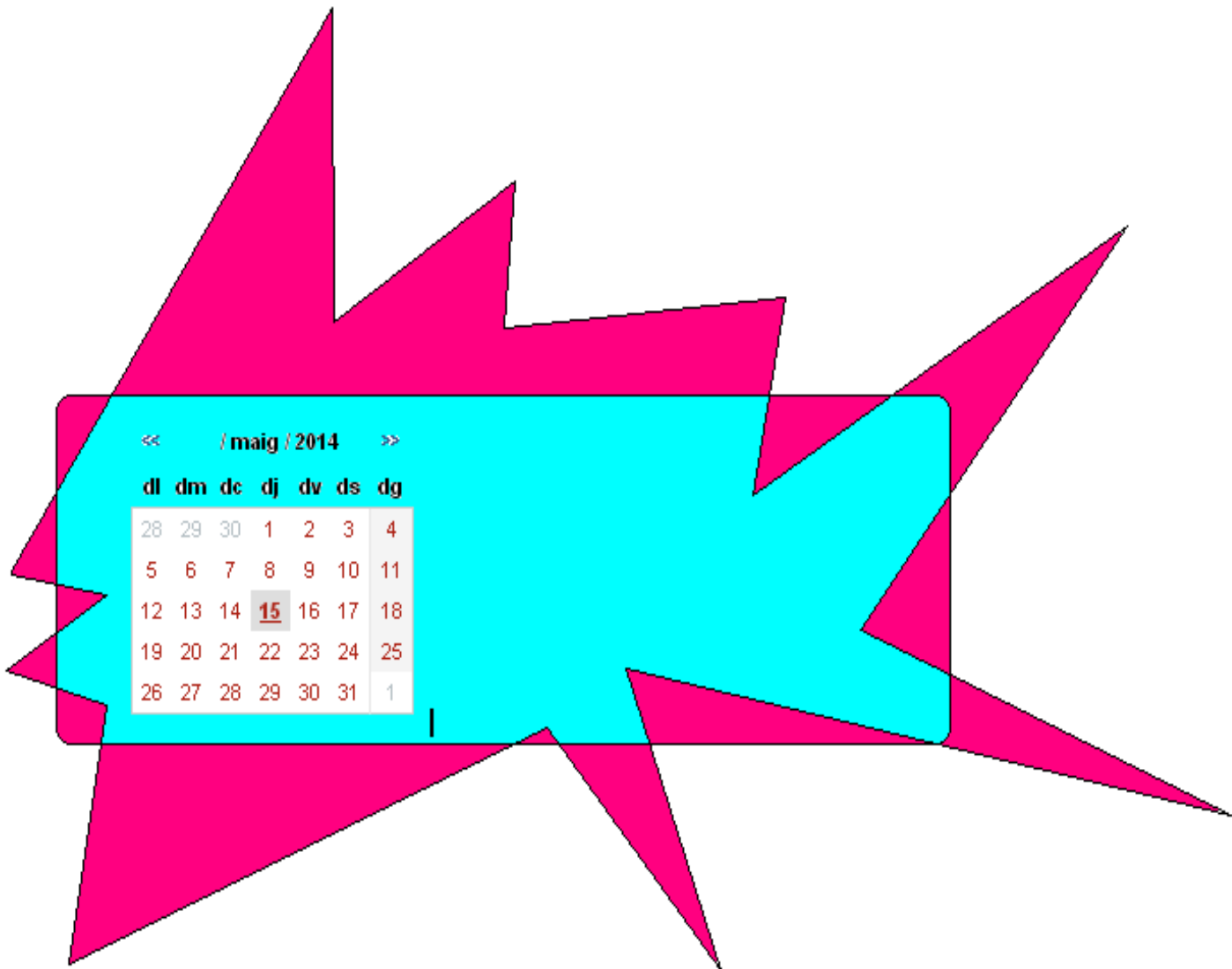




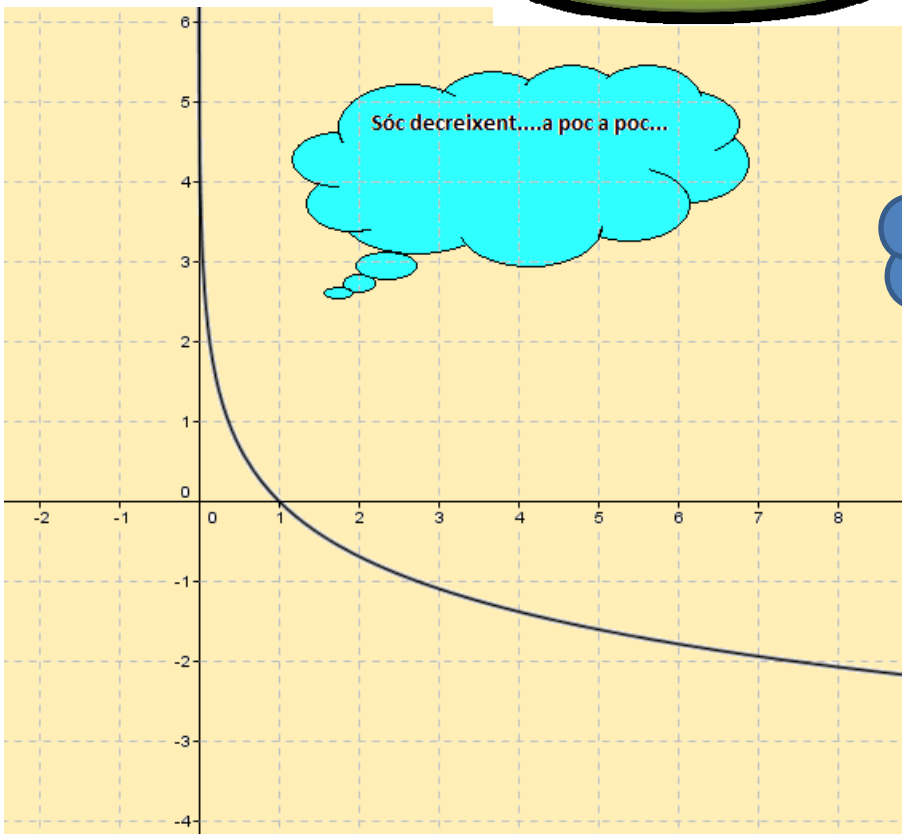
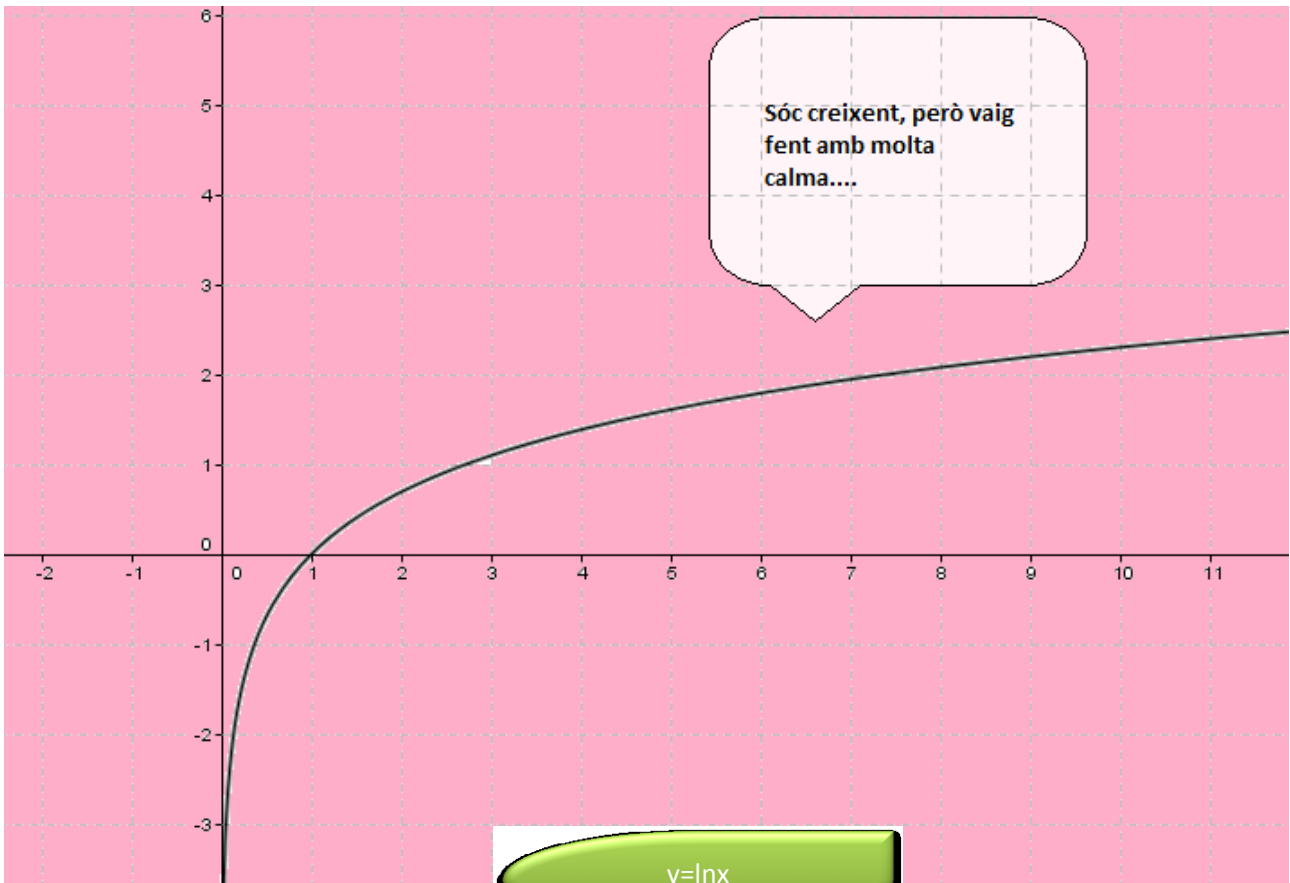
$y=e^x$

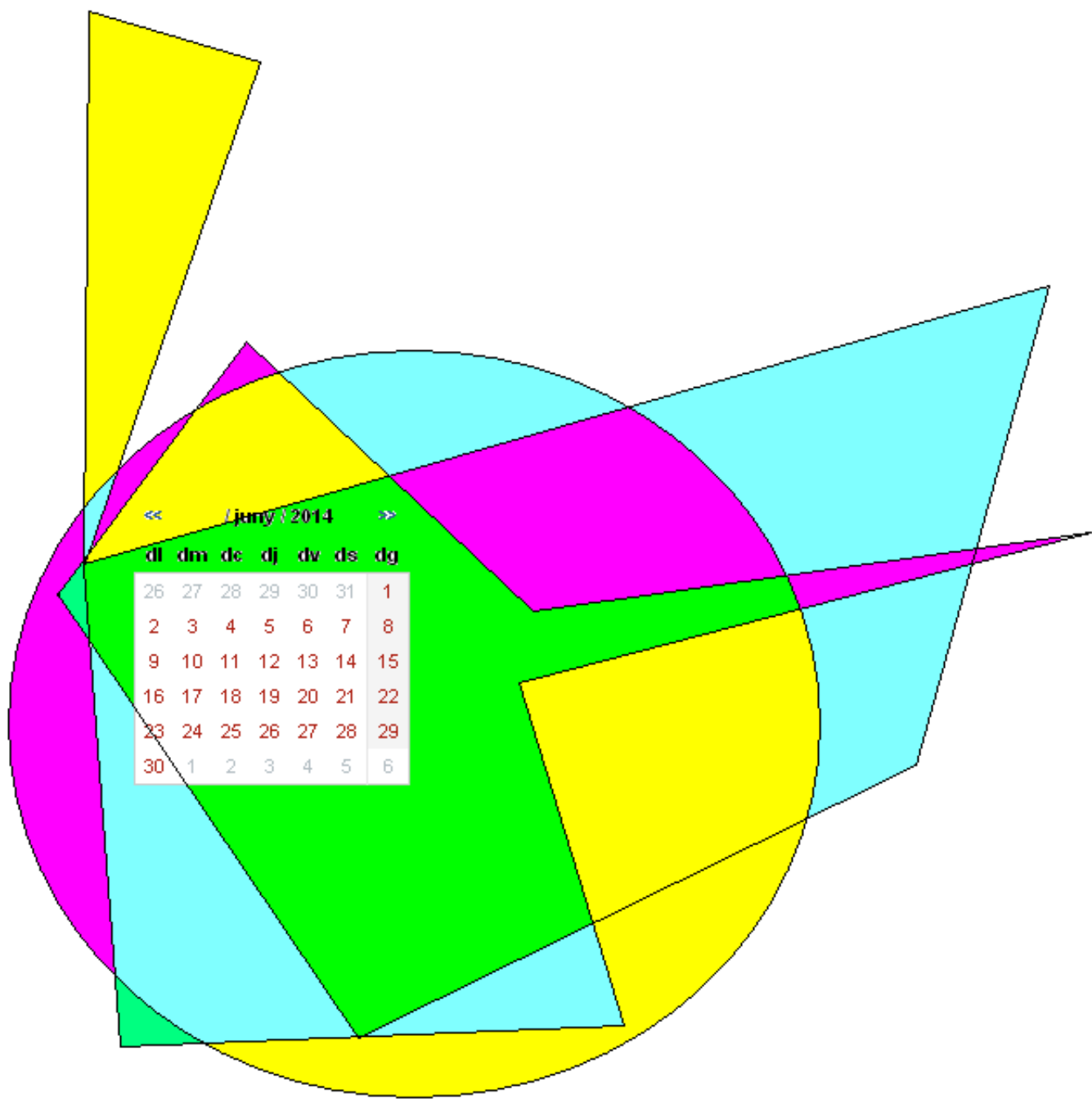


$y=e^x$

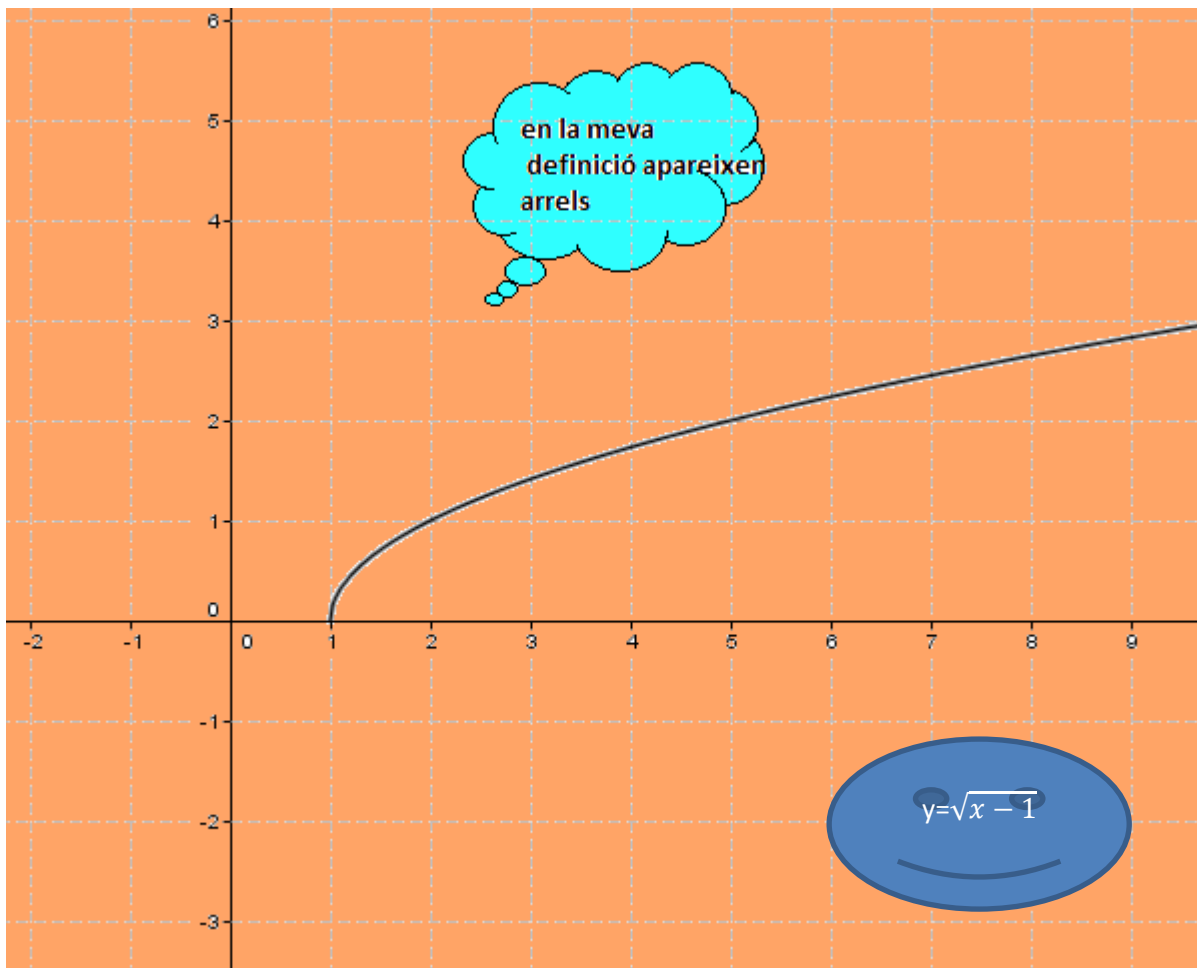


*Les funcions logarítmiques són les que creixen o decreixen més lentament*

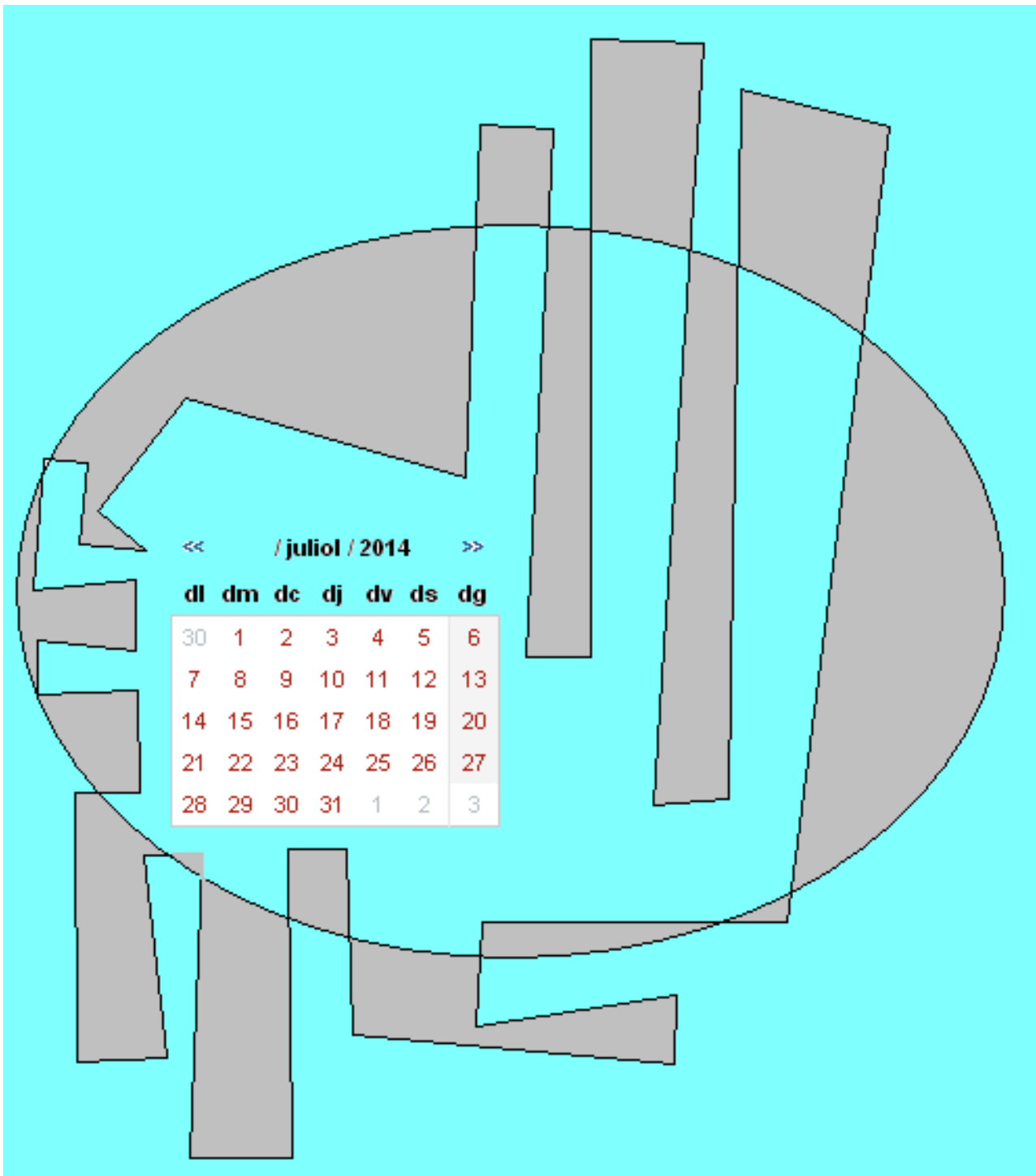




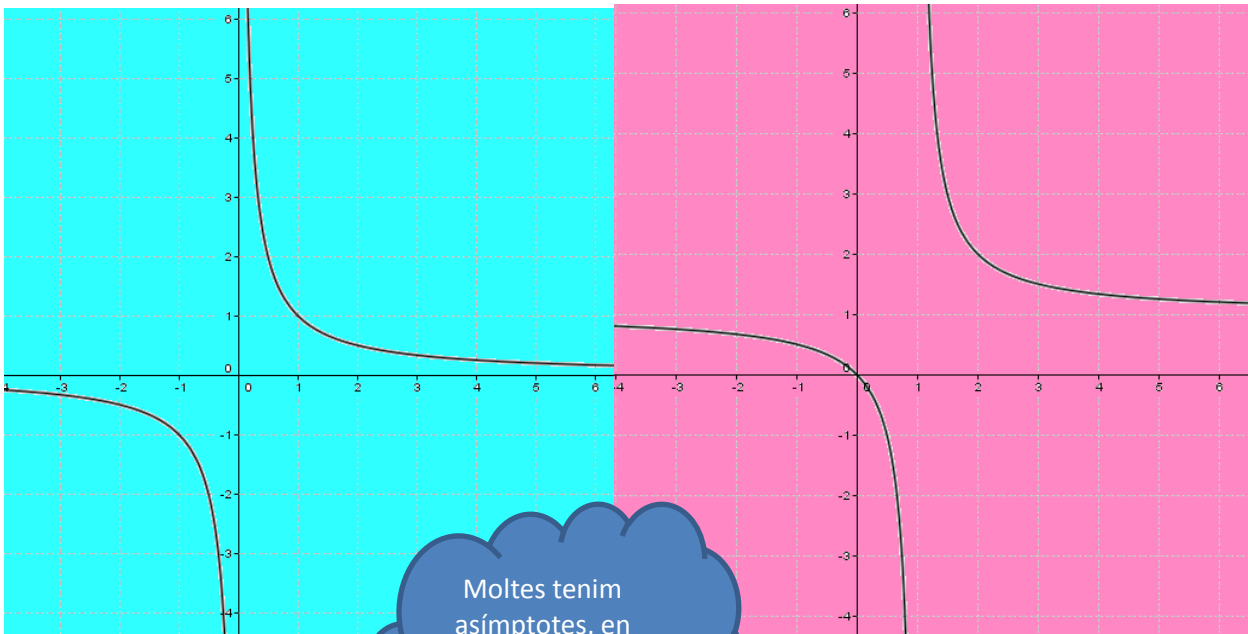
*Les funcions amb radicals*



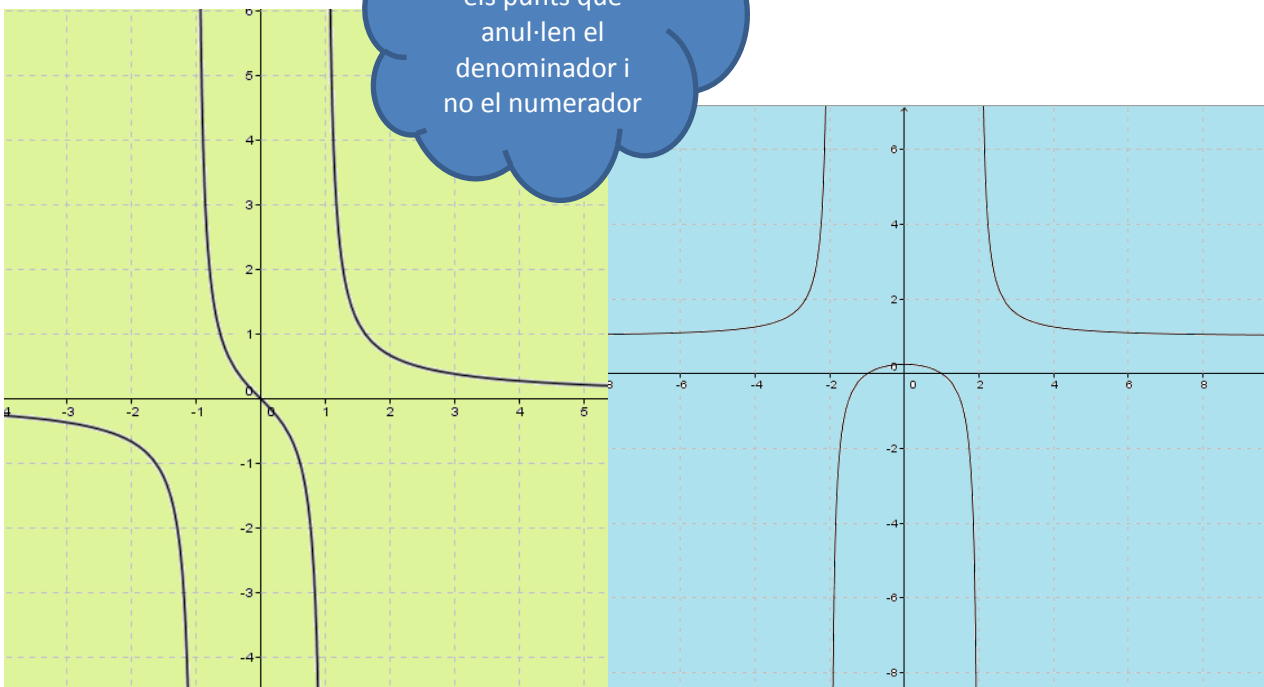
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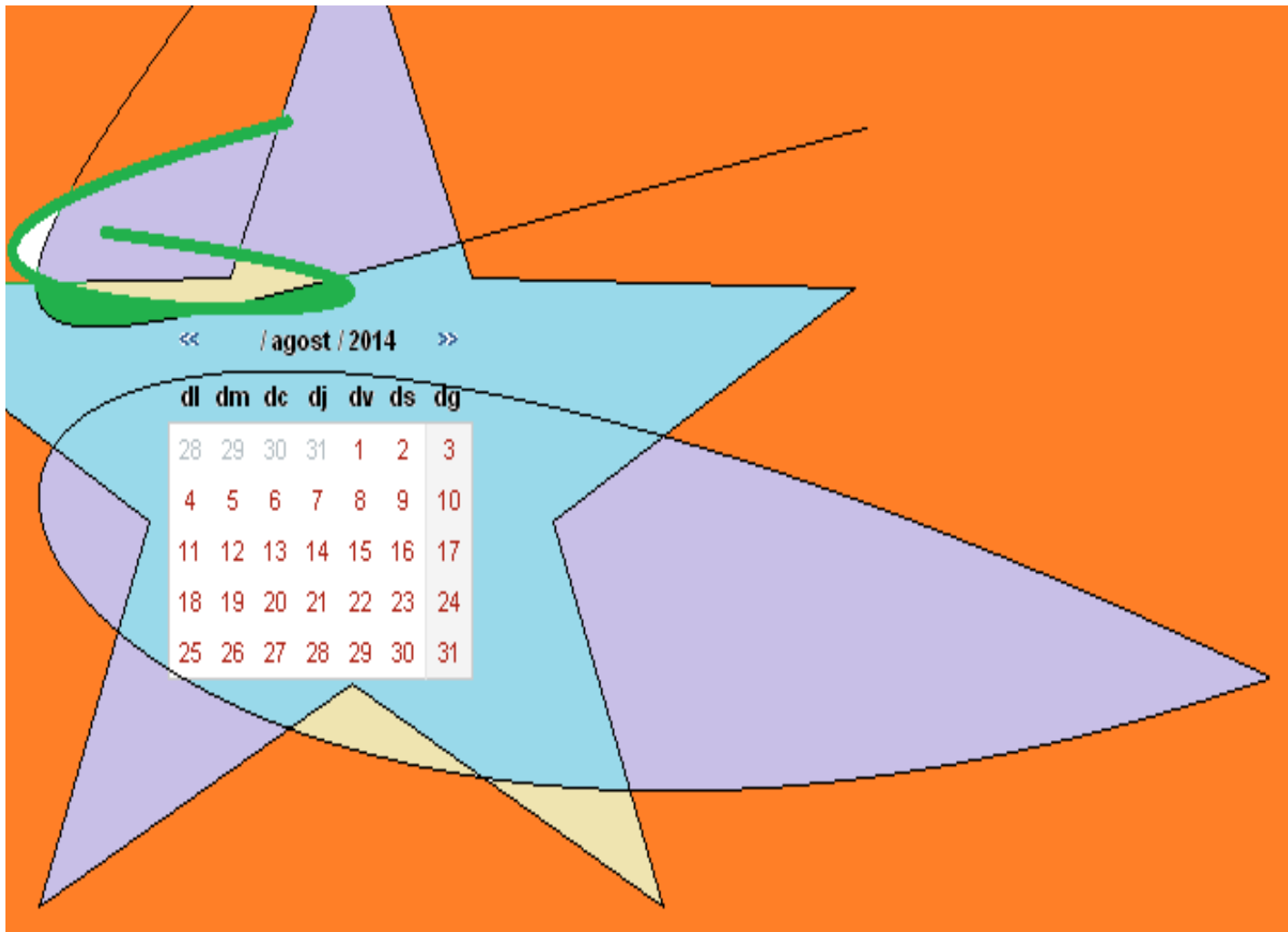


Les fonctions quotients de polinomis



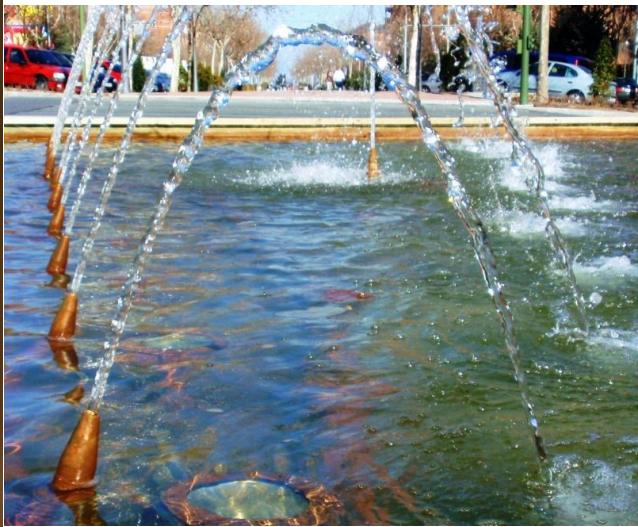
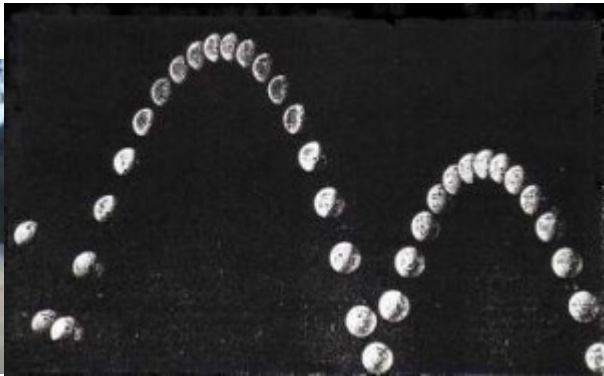
Moltes tenim  
asímtotes, en  
els punts que  
anul·len el  
denominador i  
no el numerador

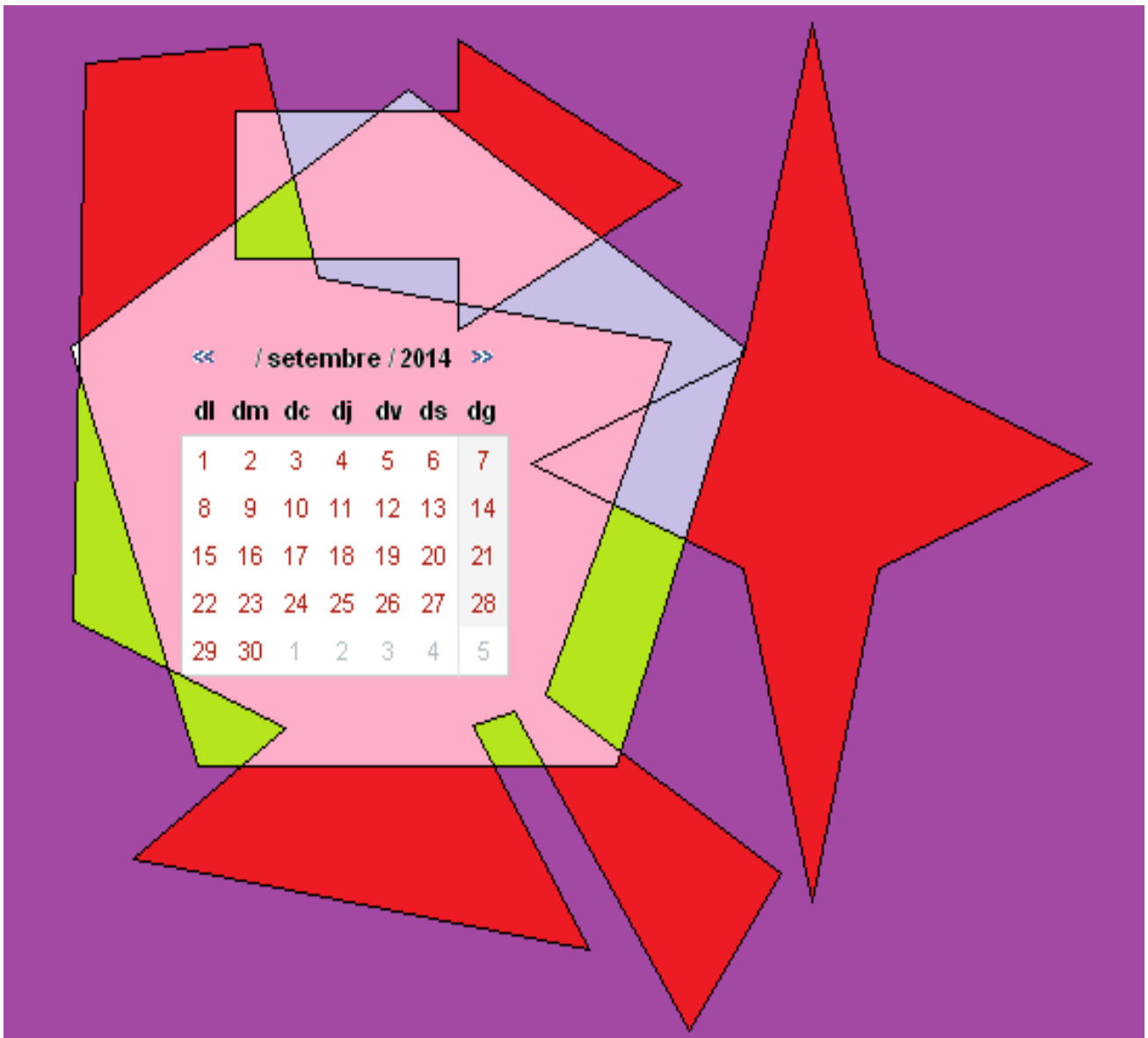




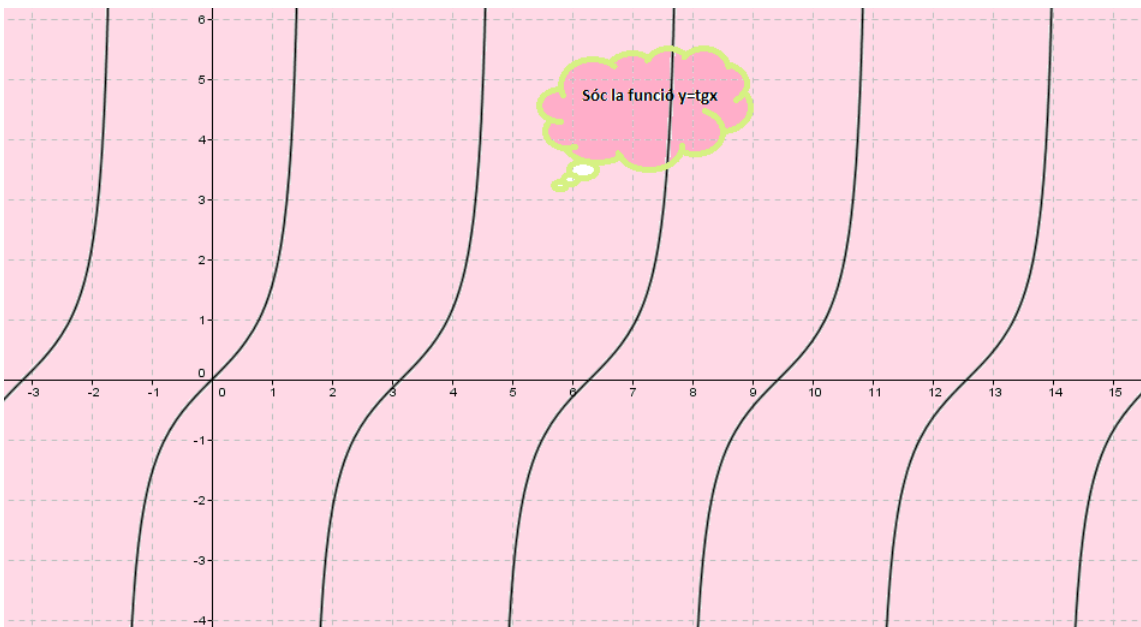
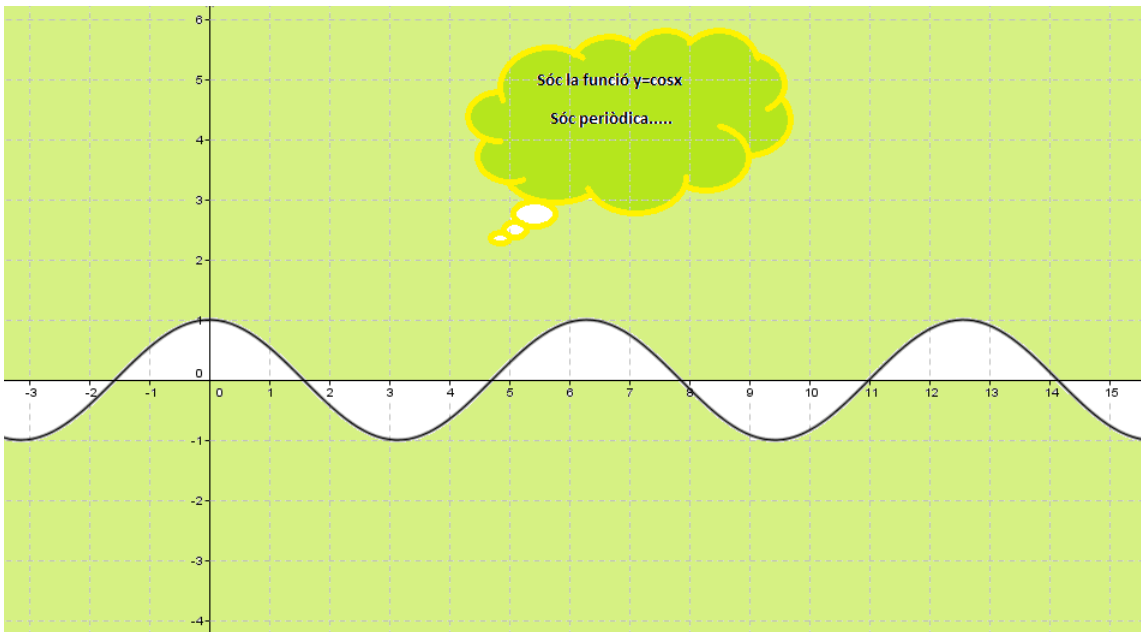
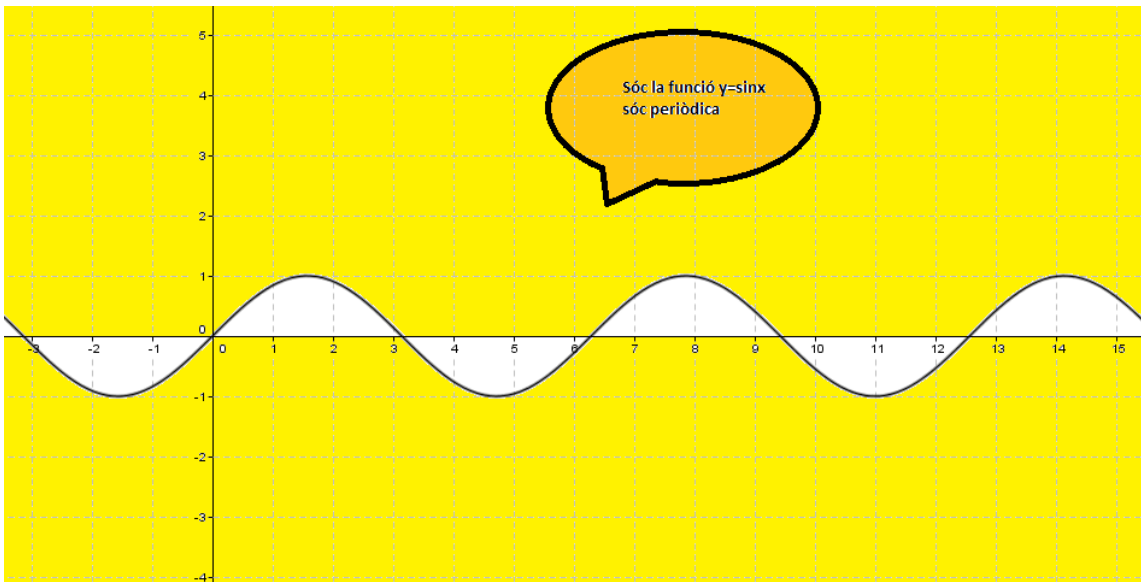
Paràboles

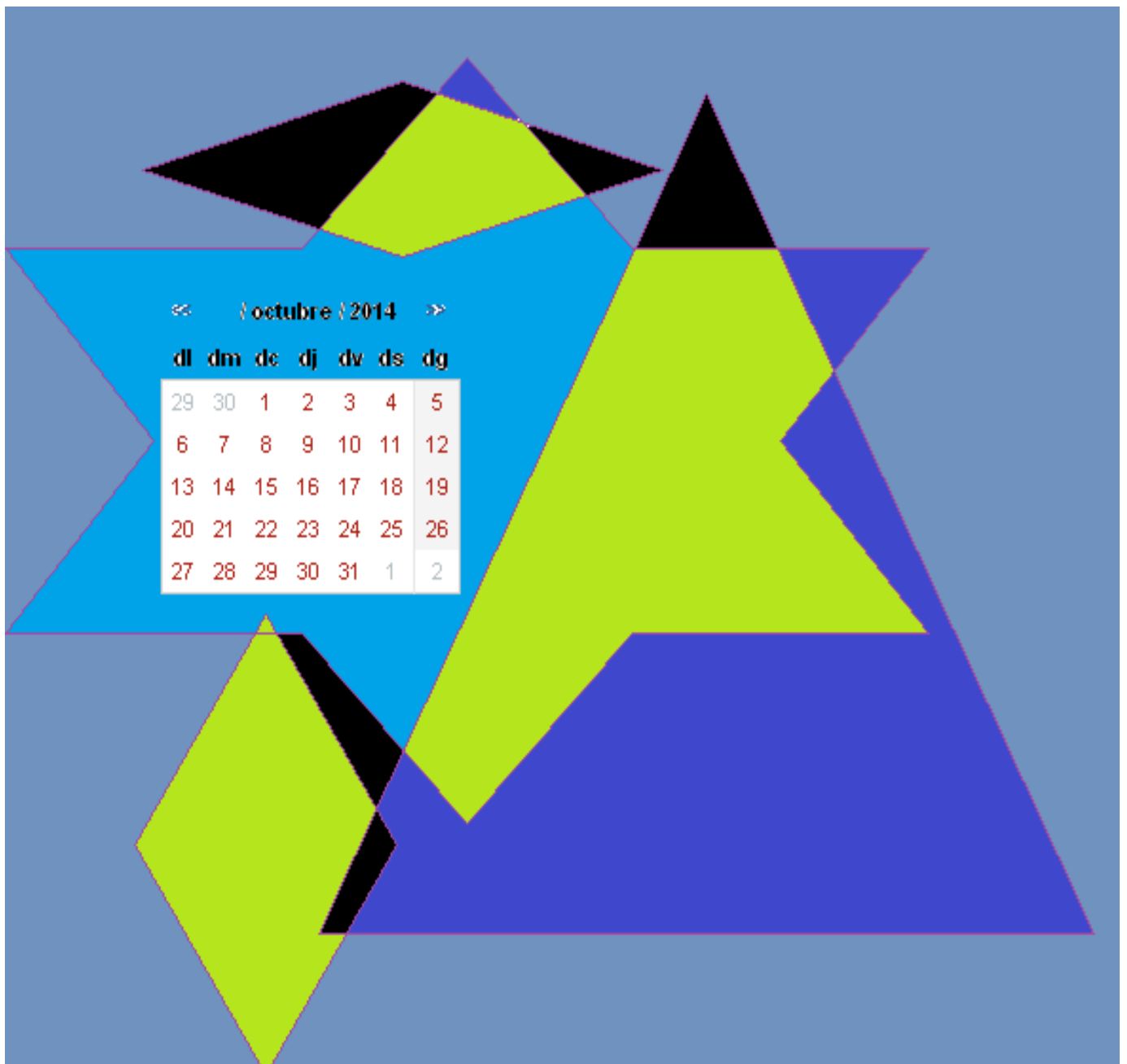




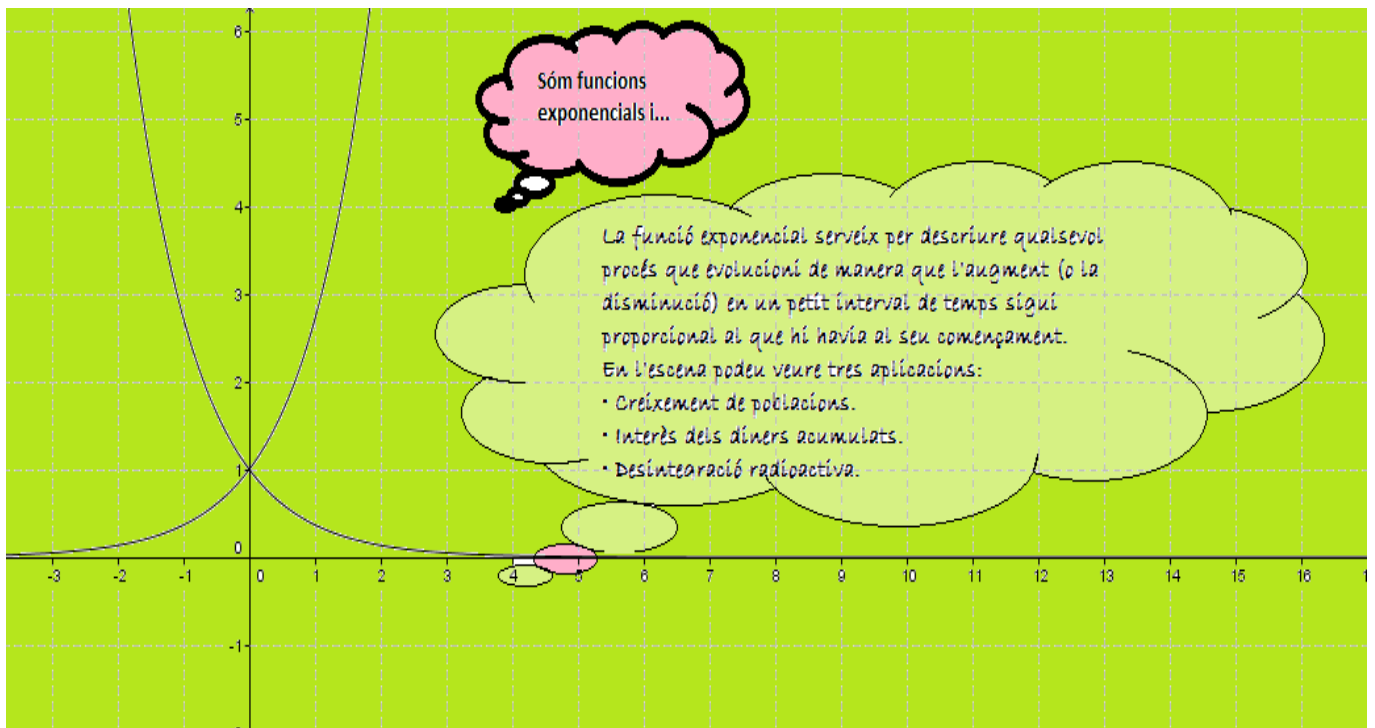


*Funcions trigonomètriques*





*Funcions exponencials*



Es col·loquen 5.000 € al 6% anual. En quant es convertiran al cap de 5 anys?

- Si els interessos s'acumulen anualment

$$C_f = 5000 \cdot 1.06^5 = 6691,13 \text{ €}$$

- Si els interessos s'acumulen mensualment

$$C_f = 5000 \cdot \left(1 + \frac{6}{1200}\right)^{12 \cdot 5} =$$

$$= 5000 \cdot 1,005^{60} = 6744,25 \text{ €}$$

- Si els interessos s'acumulen trimestralment

$$C_f = 5000 \cdot \left(1 + \frac{6}{400}\right)^{4 \cdot 5} =$$

$$= 5000 \cdot 1,015^{20} = 6734,27 \text{ €}$$

Un poble té 600 habitants. Se sap que la seva població creix a un ritme del 3% anual.

- Quants habitants tindrà d'aquí a 8 anys?

$$P = 600 \cdot 1.03^8 \approx 760$$

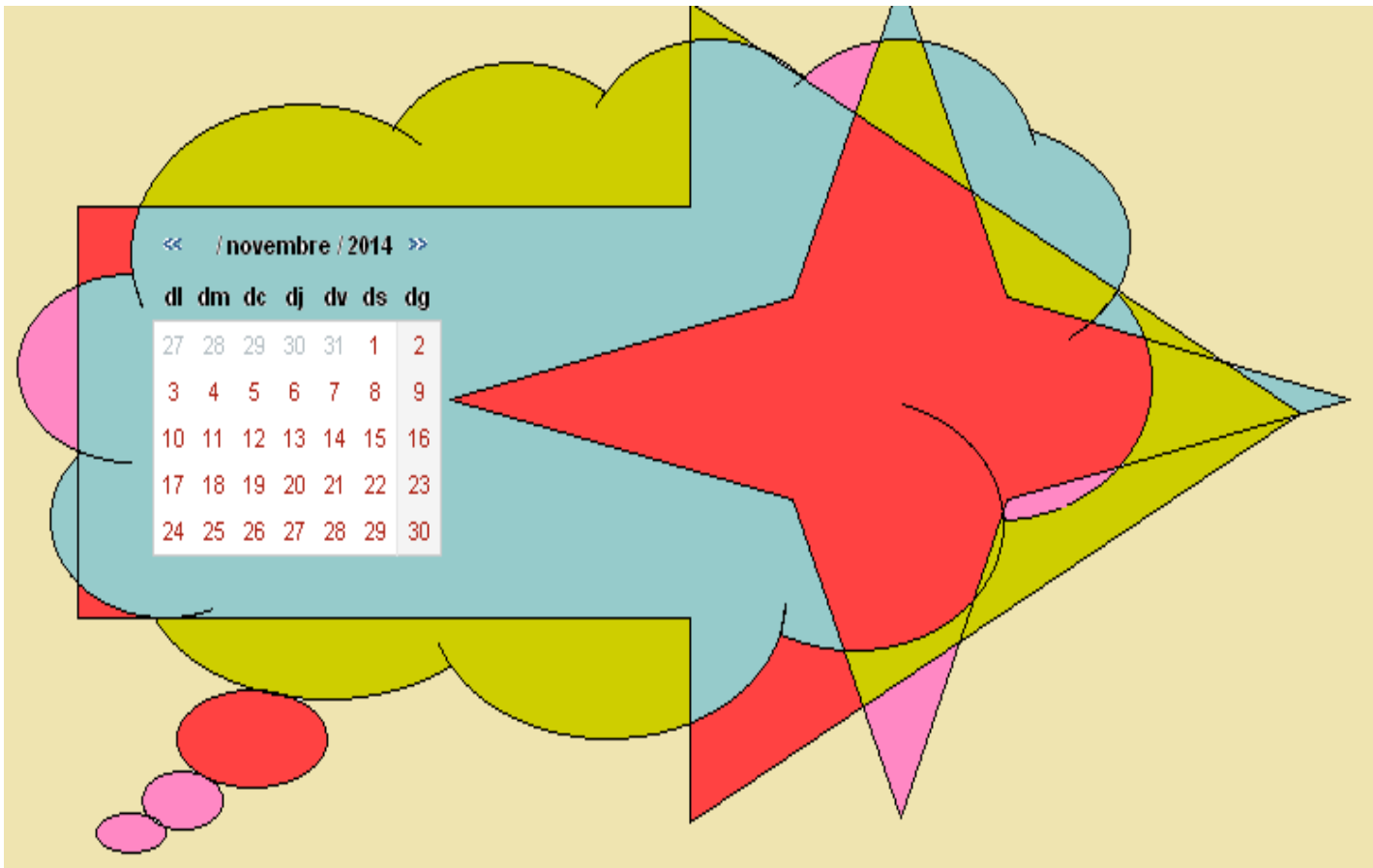
Un gram d'estranci-90 es redueix a la meitat en 28 anys. Si l'any 2000 teníem 20 grams i prenem com a origen de temps l'any 2000.

- La funció és:

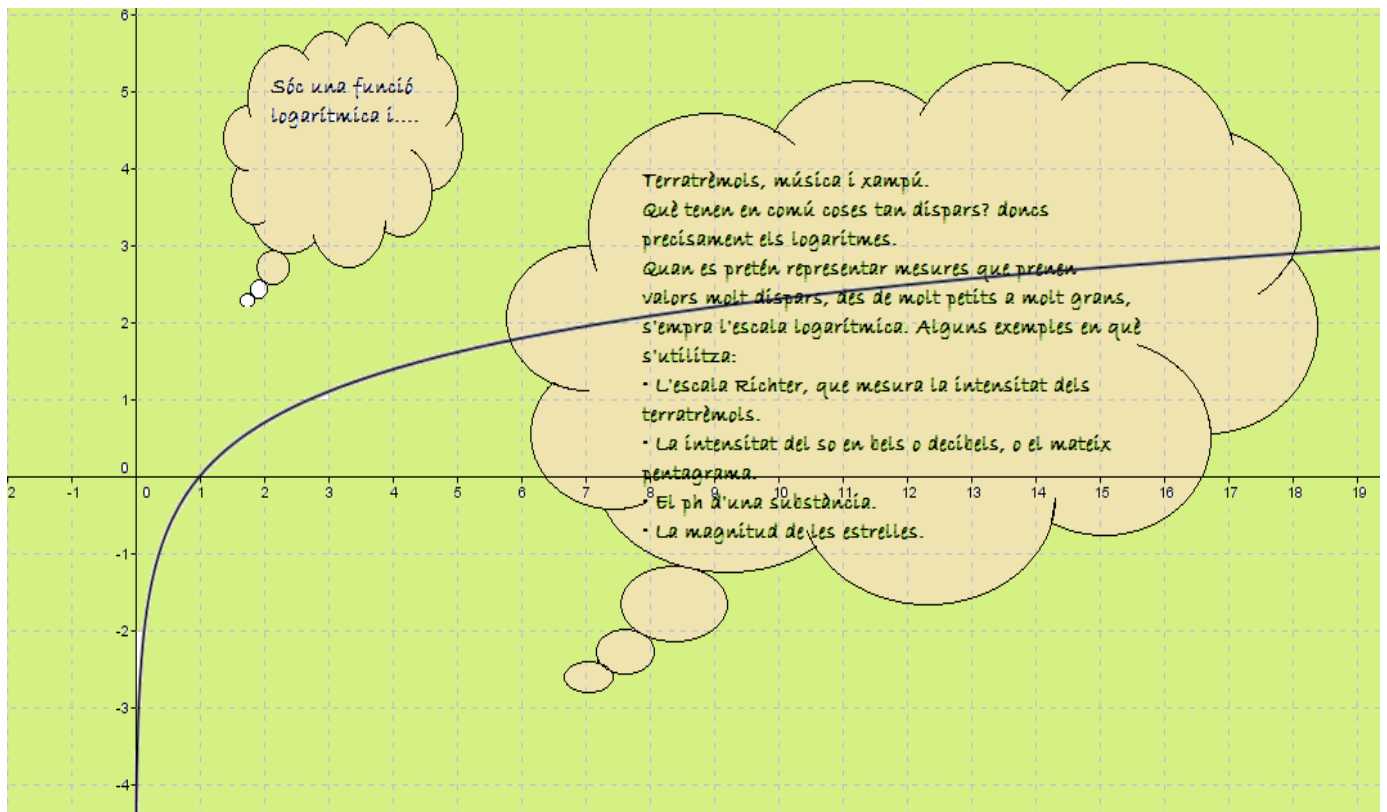
$$M(x) = 20 \cdot 0,5^{\frac{x}{28}} = 20 \cdot 0,9755^x$$

- L'any 2053 quedarà

$$M = 20 \cdot 0,9755^{53} = 5,38 \text{ gr}$$

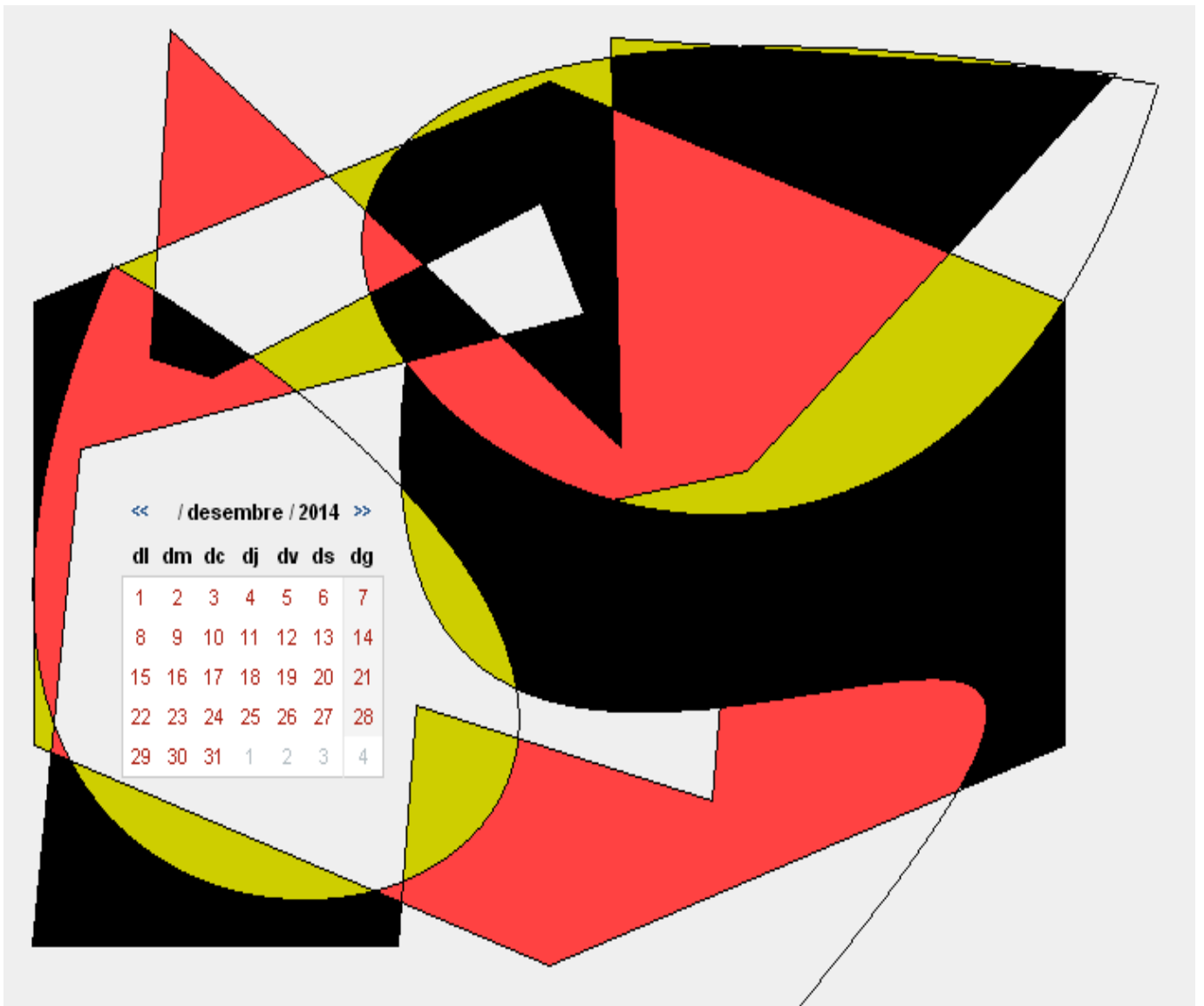


*Fonctions logarithmiques*



Quantes vegades és més gran la intensitat d'un terratrèmol de magnitud 7,9 en l'escala Richter que un de magnitud 5?

Les mesures de l'escala Richter són logaritmes decimals:  $7,9 - 5 = 2,9$   
 $10^{2,9} = 794$  vegades



Funcions, funcions, funcions, funcions,.....

# FUNCIONS