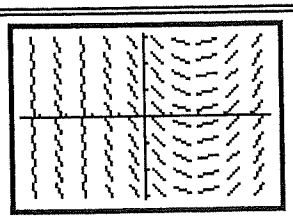
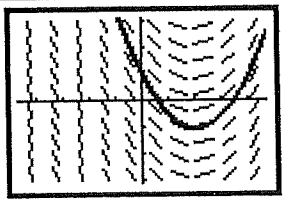
WHERE DOES A MATHEMATICIAN PICK HIS DERIVATIVES?

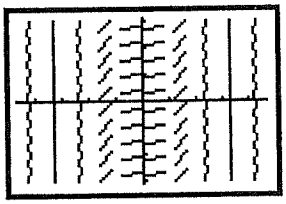
Given a function f(x) such that $f'(x) = x - 2$, An equation for f(x) is $f(x) = \frac{1}{2}x^2 - 2x + c$ where c is any constant.	 a sketch of line segments tangent to f(x) for different values of c.	 $f(x) = \frac{1}{2}x^2 - 2x + 1$ through the point (0, 1).

Match each derivative f'(x) with a graph of line segments tangent to possible functions f(x).

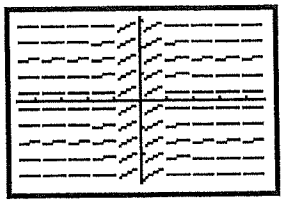
1) $f'(x) = 2x + 2$	2) $f'(x) = x^2$	3) $f'(x) = y$	4) $f'(x) = x + y$
5) $f'(x) = \frac{x}{y}$	6) $f'(x) = -\frac{x}{y}$	7) $f'(x) = e^{-x^2}$	8) $f'(x) = -\sin(x)$

Slope fields.

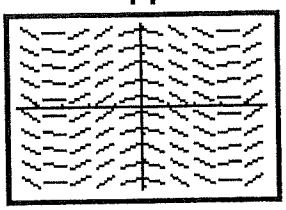
D.



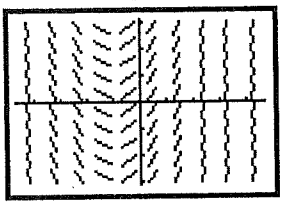
E.



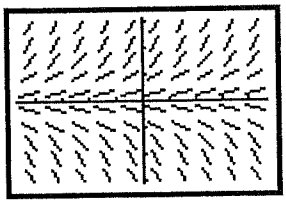
F.



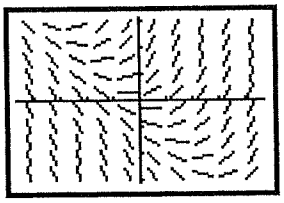
I.



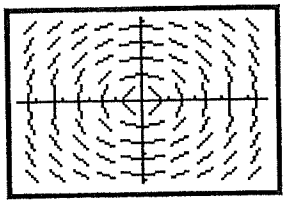
L.



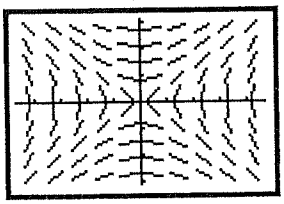
N.



P.



S.



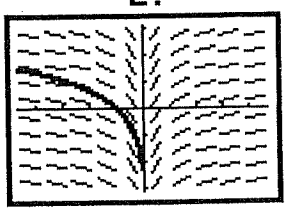
9) Which of the functions f(x) below would satisfy $f'(x) = x^2$.			
A. $f(x) = \frac{1}{2}x^2 + c$	**G.** $f(x) = x^3 + c$	**O.** $f(x) = \frac{1}{3}x^3 + c$	**T.** $f(x) = 3x^3 + c$

Match each derivative f'(x) with a graph of the function f(x) that passes through the given point.

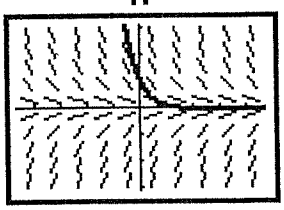
10) $f'(x) = \frac{1}{x}$; (e, 1)	11) $f'(x) = \frac{1}{x}$; (–e, 1)	12) $f'(x) = -2y$; (0, –1)	13) $f'(x) = -2y$ (0, 1)

Functions f(x).

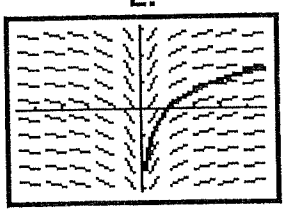
E.



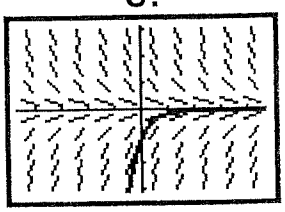
I.



L.



S.



1	4

12	10	9	6	7

8	13	11	3	2	5