

Mathé 42S – Exercice # 7B

1. Trouve la dérivée et les points critiques des fonctions suivantes

Find the derivative and critical points for the following functions

a)  $y = x^2(x - 1)^3$

b)  $y = 4x(3x + 2)^2$

c)  $y = 7x^3(2x - 5)^2$

d)  $y = 3x^3(5x - 7)^2$

e)  $y = x(8x + 3)^3$

f)  $y = (4x - 5)^2(3x + 1)$

g)  $y = 5(x - 6)^2$

h)  $y = (x - 1)^4(x + 2)^2$

2. A second degree polynomial  $f(x)$  is given such that  $f'(0) = -5$  and  $f'(1) = 1$

Find a)  $f'(3)$       b) a possible equation for  $f(x)$

3. A second degree polynomial  $g(x)$  is given such that  $g'(-2) = 29$  and  $g'(3) = -41$ . If the curve passes through the point  $(0,4)$

Find a)  $g'(0)$       b) the equation for  $g(x)$

4. A third degree polynomial  $f(x)$  is given such that  $f'(0) = 0$ ,  $f'(1) = 5$ ,  $f'(2) = 16$

Find a)  $f'(3)$

5. Trouve le sommet de la parabole ayant comme équation  $y = -2x^2 - 24x + 1$

425- Réponses - #7B.

a)  $x = 0; 1; 2/5$

e)  $x = -3/8; -3/32$

b)  $x = -2/3; x = -2/9$

f)  $x = 5/4; 7/36$

c)  $x = 0; x = 3/2; 5/2$

g)  $x = 6$

d)  $x = 0; 21/25; 7/5$

h)  $x = -2; -1; 1$

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2 a)  $f'(3) = 13$

b)  $f(x) = 3x^2 - 5x + c$

a)  $g'(0) = 1$

b)  $g(x) = -7x^2 + x + 4$

4 a)  $f'(3) = 33$

5)  $S(-6, 73)$