

INTRODUCTION TO CALCULUS

MATH 1A

UNIT 7: WORKSHEET

Problem 1: Take the following derivatives by using the rule you know

a) $9x^7$

b) $12\sqrt{x}$

c) $7x^{11} + x^{3/2}$

d) $8 + 2x + x^2$

e) $1 + x + x^2 + x^3 + x^4 + x^5 + x^6$

Problem 2: Take the derivative by using the rules you know:

a) $5e^x + 2e^{3x}$

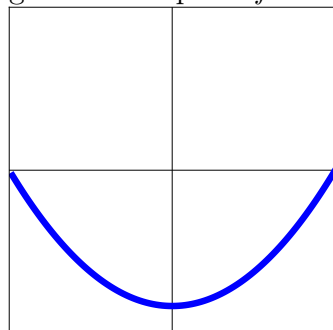
b) $3 \sin(5x) + 7 \cos(11x)$

c) $\ln(8x) + 8 \ln(29x)$.

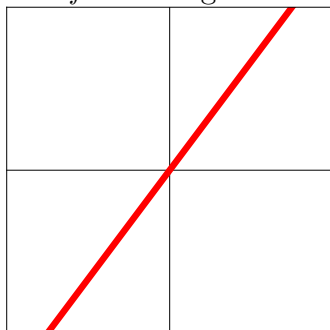
d) $\frac{1}{x} + \ln(x) + e^{5x}$

e) $x^{8/11} + x^{11/8}$

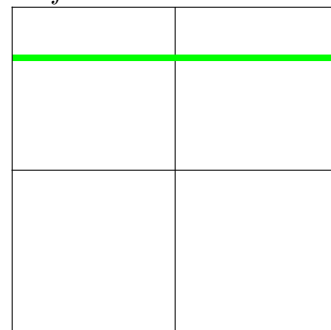
Here we see an example, where to the left we have the function f , then see f' which gives the slope of f at x and then see f'' which gives the concavity of f at x .



f



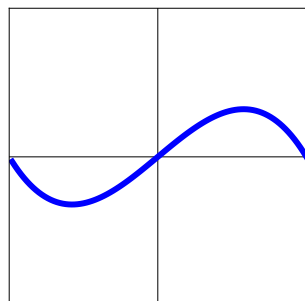
f'



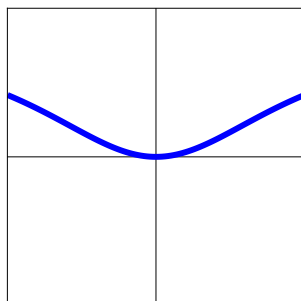
f''

Now it is your turn:

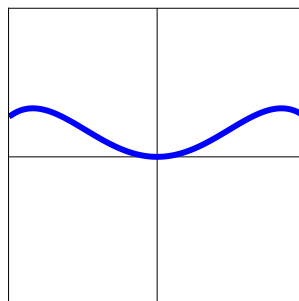
Problem 3: Match the functions with their derivative. First we show the functions f



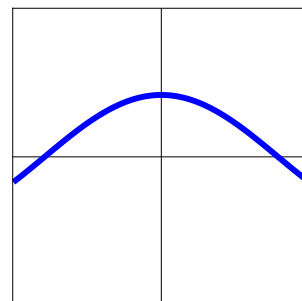
a)



b)

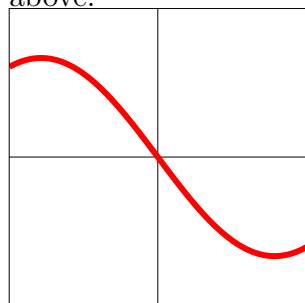


c)

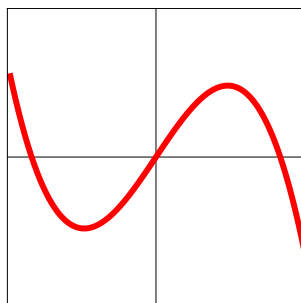


d)

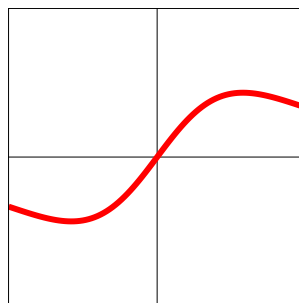
And now we show the functions f' . Match their graphs with the graphs of f seen above.



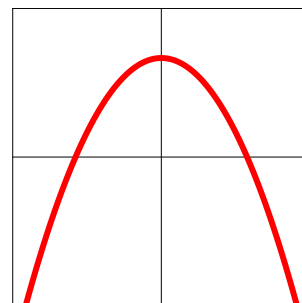
1)



2)



3)



4)