

1. Match the graph of each function (a)–(b) in Figure 1 with the graph of its derivative (I)–(IV) in Figure 2.

4 pts

- (a) Circle one: I **II** III IV
 (b) Circle one: I II III **IV**

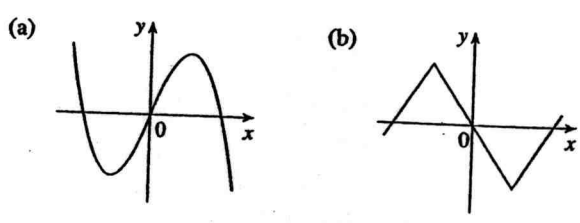


Figure 1: Functions $f(x)$, (a) and (b)

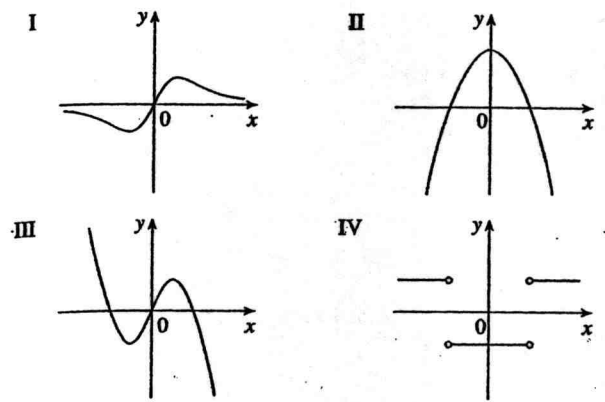


Figure 2: Functions $f'(x)$, (I), (II), (III), (IV)

2. Newton's Law of Gravitation says that the magnitude F of the force exerted by a body of mass m on a body of mass M is $F = \frac{GmM}{r^2}$. Find dF/dm , and briefly explain its meaning.

10 pts

$\frac{dF}{dm} = \frac{GM}{r^2}$: It means the rate of

change of force with respect to mass of one of the bodies.