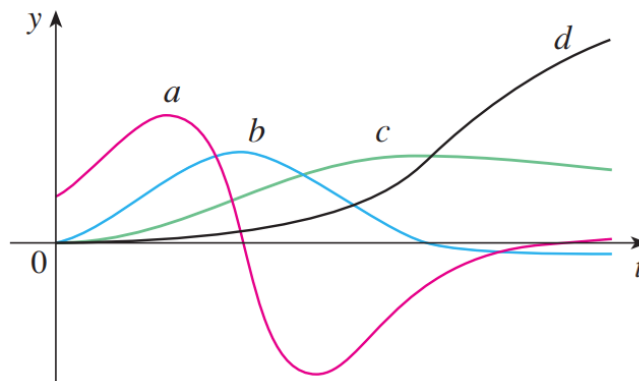


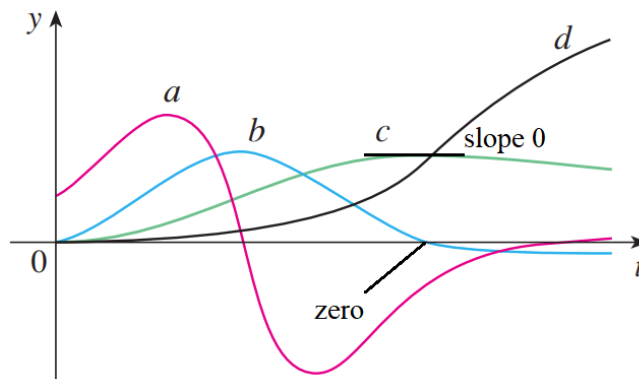
Exercise 52

The figure shows the graphs of four functions. One is the position function of a car, one is the velocity of the car, one is its acceleration, and one is its jerk. Identify each curve, and explain your choices.



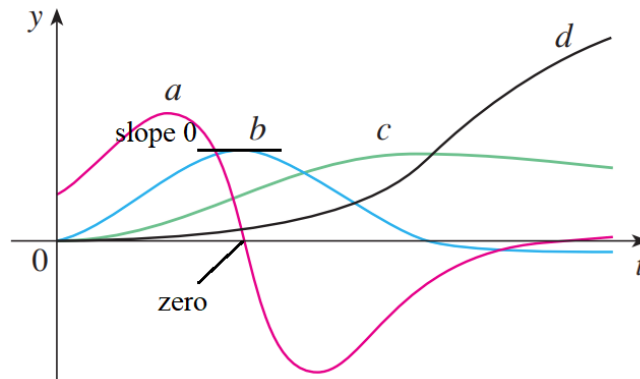
Solution

Notice that the c -curve reaches a maximum when the d -curve starts to taper off, so the c -curve is the derivative of the d -curve.



The b -curve is the derivative of the c -curve because the b -curve is zero where the c -curve has zero slope.

The a -curve is the derivative of the b -curve because the a -curve is zero where the b -curve has zero slope.



Therefore, the d -curve is the position, the c -curve is the velocity, the b -curve is the acceleration, and the a -curve is the jerk.