

Q. 5. Find a point on the curve  $y = (x-2)^2$  at which the tangent is parallel to the chord joining the points  $(2,0)$  &  $(4,4)$

Ans: Slope of tangent = slope of chord  
$$= \frac{4-0}{4-2} = 2$$

Now slope of the tangent to the given curve at a point  $(x, y)$  is given by,

$$\frac{dy}{dx} = 2(x-2) = 2$$

$$x-2 = 1$$

$$\Rightarrow x = 3$$

$$\Rightarrow y = 1$$

Hence, required point is  $(3, 1)$ .