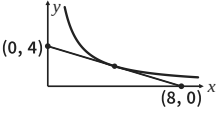
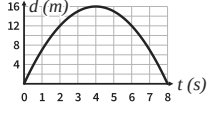
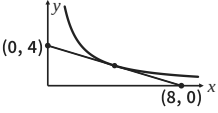
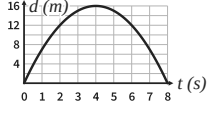


a Find the tangent's gradient  -0.5 a falling tangent	b Find the point on $y = -x^2 + 6x$ where the gradient is 0 $(3, 9)$ zero gradient on a n shape	c When is the object stationary?  $t = 4 \text{ s}$ stationary: zero gradient	d $y = x^2$. Use the chord from $x = 2.9$ to $x = 3.1$ to estimate the gradient at $x = 3$ 6 a chord either side of a point
e $y = x^2$. Find the average rate of change from $x = a$ to $x = a + 2$ in terms of a $2a + 2$ an average rate in terms of a	f $y = x^2 + 3x$. Find the gradient of the chord from $x = 2$ to $x = 2 + h$ in terms of h $7 + h$ a chord gradient in terms of h	g A chord from $x = 1$ to $1 + h$ has gradient $5 + 2h$. Find the gradient at $x = 1$. 5 the gradient as h gets smaller	h $y = x^2$. The tangent at $(3, 9)$ has gradient 6. Find its x intercept. $(1.5, 0)$ where a tangent crosses an axis
i The average rate of change of $y = x^2 + bx$ from $x = 0$ to $x = 4$ is 1. Find b . $b = -3$ working back to a coefficient	j $y = 3^x$. From $x = 0$ to $x = k$ the average rate is 4. Find k . $k = 2$ an exponential worked back	k Show the chord of $y = x^2$ from $x = a$ to $x = b$ has gradient $a + b$ $\frac{b^2 - a^2}{b - a} = a + b$ proving a chord gradient on $y = x^2$	l $y = \frac{1}{x}$. Show the chord from $x = a$ to $x = b$ has gradient $-\frac{1}{ab}$ $\frac{a - b}{ab(b - a)} = -\frac{1}{ab}$ the chord gradient on $y = 1/x$

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