#Jenny

Finally I get this ebook, thanks for all these I can get now!

#Rio

Cool! I'am really happy

#Markus Jensen

I did not think that this would work, my best friend showed me this website, and it does! I get my most wanted eBook

#Hun Tsu

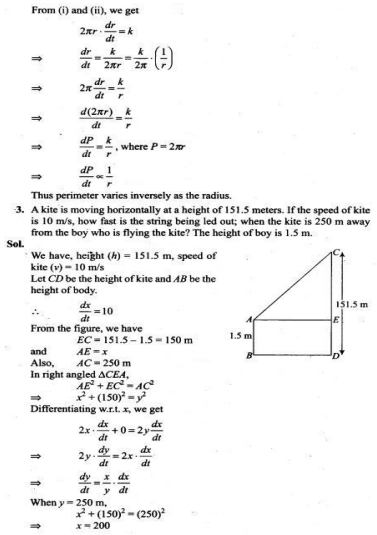
wtf this great ebook for free?!

#Che Salsa

My friends are so mad that they do not know how I have all the high quality ebook which they do not!

#Diego Butler

so many fake sites. this is the first one which worked! Many thanks



From (i) and (ii), we get

$$2\pi r \cdot \frac{dr}{dt} = k$$

$$\Rightarrow \quad \frac{dr}{dt} = \frac{k}{2\pi r} = \frac{k}{2\pi} \cdot \left(\frac{1}{r}\right)$$

$$\Rightarrow \quad 2\pi \frac{dr}{dt} = \frac{k}{r}$$

$$\Rightarrow \quad \frac{d(2\pi r)}{dt} = \frac{k}{r}$$

$$\Rightarrow \quad \frac{dP}{dt} = \frac{k}{r}, \text{ where } P = 2\pi r$$

$$\Rightarrow \quad \frac{dP}{dt} \propto \frac{1}{r}$$

Thus perimeter varies inversely as the radius.

3. A kite is moving horizontally at a height of 151.5 meters. If the speed of kite is 10 m/s, how fast is the string being led out; when the kite is 250 m away from the boy who is flying the kite? The height of boy is 1.5 m.

Sol. We have, height (h) = 151.5 m, speed of kite (v) = 10 m/s

Let CD be the height of kite and AB be the height of body.

$$\therefore \quad \frac{dx}{dt} = 10$$

From the figure, we have

$EC = 151.5 - 1.5 = 150$ m

and $AE = x$

Also, $AC = 250$ m

In right angled ΔCEA,

$$AE^2 + EC^2 = AC^2$$

$$\Rightarrow \quad x^2 + (150)^2 = y^2$$

Differentiating w.r.t. x, we get

$$2x \cdot \frac{dx}{dt} + 0 = 2y \frac{dx}{dt}$$

$$\Rightarrow \quad 2y \cdot \frac{dy}{dt} = 2x \cdot \frac{dx}{dt}$$

$$\Rightarrow \quad \frac{dy}{dt} = \frac{x}{y} \cdot \frac{dx}{dt}$$

When $y = 250$ m,

$$x^2 + (150)^2 = (250)^2$$

$$\Rightarrow \quad x = 200$$