This book has permission to use the "N&K method of COLORS".

35) Question: John uses a right circular cylinder shown below, to store water.
If the volume of the cylinder is 250π cubic feet, what is the diameter of the base of the cylinder in feet?
It is given that the height of the cylinder is 10 feet.

For speed, while solving something similar, only THINK the words in blue; WRITE only the words in other COLORS.

Solution:
Given 1) John uses a right circular cylinder shown above, to store water.
2) The volume of the cylinder is 250π cubic feet.
3) What is the diameter of the base of the cylinder in feet?
4) It is given that the height of the cylinder is 10 feet.
Road Map of Solution:
First Step: Write down the formula for the "Volume of a Cylinder.
Second Step: Equate "formula of volume of a cylinder" with "volume of the cylinder" from Second Given Statement.

First Step: Write down the formula for the "Volume of a Cylinder".
= area of the circular base × height of the cylinder
= $\pi \times radius^2$ × height of the cylinder

Second Step: Equate "formula of volume of a cylinder" with "volume of the cylinder"; from 2nd Given Stmnt.

	⇒	*formula of volume of a cylinder*	=	250π cubic ft	
	⇒	*area of the circular base* × *ht. of the cylinder*	=	$250\pi\ ft^3$	
	⇒	$\pi \times radius^2$ × *ht. of the cylinder*	=	$250\pi\ ft^3$	
Insert statement					
	⇒	$\pi \times radius^2$ × 10 ft	$\times \left(\frac{1}{10ft}\right)$ =	$250\pi\ ft^3$	$\times \left(\frac{1}{10ft}\right)$
	⇒	$\pi \times radius^2$	=	$25\pi\ ft^2$	
Insert statement					
	⇒	$\pi \times radius^2$ $\times \left(\frac{1}{\pi}\right)$	=	$25\pi\ ft^2$	$\times \left(\frac{1}{\pi}\right)$
	⇒	$radius^2$	=	$25\ ft^2$	
	⇒	$radius^2$	=	$5^2\ ft^2$	
	⇒	$radius$	=	$5\ ft$	*Answer.*