Unit 5

L3 Areas of Prisms and Cylinders

For every solid we can find two types of areas:

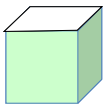
- Lateral area (A_L): area of lateral faces-no base(s)
- Total area (A_T): area of lateral faces and base(s)

Formulas:

	A_L (Lateral Area)	$A_T = A_L + 2A_b$ (Total Area)
Cubes		
Prisms		
Cylinders		

	A_L (Lateral Area)	$A_T = A_L + 2A_b$ (Area total)
Cubes	$4w^2$	$6w^2$

Ex 1: Find the total area

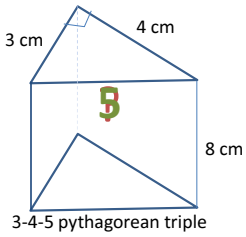


3 cm

	A_L (Lateral Area)	$A_T = A_L + 2A_b$ (Area total)
Prisms	$P_b h$	$P_b h + 2A_b$

Ex 2: Find the total area:

$A_T = P_b h + 2A_b$



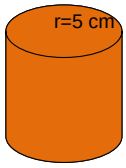
3-4-5 pythagorean triple

$P_b = 3+4+5 = 12$

$A_b = (3)(4)/2 = 6$

	A_L (Lateral Area)	$A_T = A_L + 2A_b$ (Area total)
Cylinders	$2\pi rh$ or πdh	$2\pi rh + 2\pi r^2$

Ex 3: Find the total surface area of the cylinder

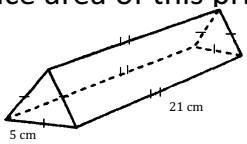


$A_T = 2\pi rh + 2\pi r^2$

	A_L (Lateral Area)	$A_T = A_L + 2A_b$ (Area total)
Prisms	$P_b h$	$P_b h + 2A_b$

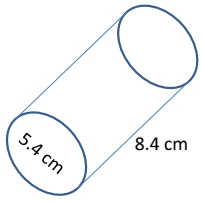
Ex 4: Find the total surface area of this prism

$A_T = P_b h + 2A_b$



	A_L (Lateral Area)	$A_T = A_L + 2A_b$ (Area total)
Cylinders	$2\pi rh$ or πdh	$2\pi rh + 2\pi r^2$

Ex 5: Find the total area:



If d = 5.4 cm
Then r = 2.7 cm

Practice: 5.5 Set 1