

## Knowledge Organiser

Lent Term Set 3c

Year 11



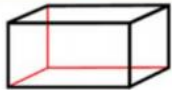

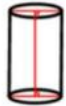
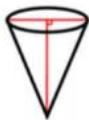


Topic	Self-Assessment	Independent Learning and homework tasks	
		MyMaths	CorbettMaths.com
Finding the lower and upper bound of rounded numbers.		Number, Estimating and Accuracy, Upper and lower bounds 1	
Calculating using the lower and upper bound.		Number, Estimating and Accuracy, Upper and lower bounds 2	
Calculating the volume and surface area of pyramids (including frustums), cones and spheres.		Shape, Volume & Surface Area	Video 359 - 361
Using scale factors for surface area and volume for enlargement of similar solids.		Shape, Scale & Similarity	Video 293a, b
Identify direct and indirect proportion.		Number, Ratio & Proportion, Direct & Inverse Proportion	Video 254, 255
Perform calculations involving direct and inverse proportionality.		Number, Ratio & Proportion, Direct & Inverse Proportion	Video 254, 255
Recognise and interpret proportionality graphs.		Number, Ratio & Proportion, Direct & Inverse Proportion	Video 254, 255
Use co-ordinates in three dimensions.		Algebra, Coordinates, 3D coordinates	Video 86
Solving quadratic equations using the quadratic formula.		Algebra, Equations - quadratics, Completing the square / Quad Formula	Video 267, 267a
Solve problems by first forming quadratic equations.		Algebra, Equations - quadratics, Quadratic Equations 2	
Use algebra to prove number statements and disprove number statements using a counter example.		Algebra, Proof & Identities, Proof	Video 365
Recognise and use the equation of a circle with centre at the origin (7).		Algebra, Graphs, Equation of a circle / Tangents and chords	Video 372
Find approximate solutions to equations numerically using iteration, including the use of suffix notation in recursive formulae.		Algebra, Equations - approx. solutions, Iterations	Video 373

## Lent Term Knowledge

### Upper and lower bounds

When a number is written there are upper and lower bounds to its value e.g. 500dhs to the nearest 100dhs could be as small as 450dhs and as large as 550dhs n.b. the upper bound seems to be too large but this is how bounds are identified.

### Volume and Surface Area of 3D shapes

Figure	Shape	Volume	C.S.A./L.S.A.	Total Surface Area
	CUBOID	$l b h$	$2 l h + 2 b h$	$2 l h + 2 b h + 2 l b$
	CUBE	$a^3$	$4 a^2$	$6 a^2$
	CYLINDER	$\pi r^2 h$	$2 \pi r h$	$2 \pi r (h + r)$
	CONE	$\frac{1}{3} \pi r^2 h$	$\pi r l$	$\pi r (l + r)$
	SPHERE	$\frac{4}{3} \pi r^3$	$4 \pi r^2$	$4 \pi r^2$
	HEMI-SPHERE	$\frac{2}{3} \pi r^3$	$2 \pi r^2$	$3 \pi r^2$

Quadratic Formula  $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Equation of a Circle  $(x - a)^2 + (y - b)^2 = r^2$

Scan for full list of Maths facts

