Geometry and trigonometry

International Baccalaureate · IB Diploma · Mathematics: Analysis and Approaches · HL · Vocabulary in context

Word	Example
• **midpoint** /'mɪdpɔɪnt/	The **midpoint** of (0, 0) and (4, 6) is (2, 3). (0, 0) (4, 6) (2, 3)
slant height /slænt haɪt/	The **slant height** of a cone runs from the tip to the edge of the base.
pyramid /'pɪrəmɪd/	A **pyramid** has a base and triangular sides meeting at a point.
cone /kəʊn/	An ice cream cone is a **cone**.
sphere /sfɪə/	A ball is a **sphere**.
hemisphere /'hemɪsfɪə/	A **hemisphere** is half of a sphere.
space diagonal /speɪs daɪ'ægənl/	The **space diagonal** of a cuboid joins opposite corners through the middle.
hypotenuse /haɪ'pɒtənju:s/	The **hypotenuse** is the longest side of a right triangle.
angle of elevation /'æŋgl ɒv ˌelɪ'veɪʃn/	The **angle of elevation** is measured up from the horizontal.
angle of depression /'æŋgl ɒv dɪ'preʃn/	The **angle of depression** is measured down from the horizontal.
bearing /'beərɪŋ/	The ship sails on a **bearing** of 090°, due east. 090°
sine rule /saɪn ru:l/	Use the **sine rule** to find the missing side.

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cosine rule /'kəʊsaɪn ru:l/	Use the **cosine rule** when you know two sides and the angle between them.
radian /'reɪdɪən/	One full turn is an angle of 2π **radians**. 2π
sector /'sektə/	A **sector** is a slice of a circle, like a piece of pizza.
segment /'segmənt/	A **segment** is the part of a circle cut off by a chord.
unit circle /'ju:nɪt 'sɜ:kl/	A **unit circle** has a radius of one.
identity /aɪ'dentɪti/	$2(x + 1) = 2x + 2$ is an **identity**: it is true for every x. $2(x + 1) = 2x + 2$ x
double angle identity	The **double angle identity** says $\sin 2\theta = 2 \sin \theta \cos \theta$. $\sin 2\theta = 2 \sin \theta \cos \theta$
period /'pɪərɪəd/	The **period** of the wave is 0.02 s. 0.02 s
amplitude /'æmplɪtju:d/	Loud sounds have a large **amplitude**.
principal axis /'prɪnsɪpl 'æksɪs/	The graph $y = 3 \sin x + 1$ has **principal axis** $y = 1$. $y = 3 \sin x + 1$ $y = 1$
principal value /'prɪnsɪpl 'vælju:/	A calculator gives only the **principal value**, such as $\sin^{-1}(0.5) = 30°$. $\sin^{-1}(0.5) = 30°$
inverse function /ɪn'vɜ:s 'fʌŋkʃn/	The **inverse function** undoes the original function.
vector /'vektə/	A **vector** describes both size and direction.
scalar /'skeɪlə/	Mass is a **scalar** because it has no direction.
magnitude /'mægnɪtju:d/	The **magnitude** of the vector $3i + 4j$ is 5. $3i + 4j$ 5

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↗ **unit vector** /ˈjuːnɪt ˈvektə/	A **unit vector** has a magnitude of 1, such as i or j. 1 i j
position vector /pəˈzɪʃn ˈvektə/	The **position vector** of point A tells you where A is from the origin. A A
• **scalar product** /ˈskeɪlə ˈprɒdʌkt/	The **scalar product** of perpendicular vectors is zero.
× **vector product** /ˈvektə ˈprɒdʌkt/	The **vector product** of two vectors is at right angles to both.
↗ **direction vector** /daɪˈrekʃn ˈvektə/	The **direction vector** shows which way the line points.
⤢ **skew** /skjuː/	**Skew** lines are not parallel and never meet.
↥ **normal vector** /ˈnɔːml ˈvektə/	A **normal vector** is at right angles to the plane.

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