# Functions

International Baccalaureate · IB Diploma · Mathematics: Applications and Interpretation · HL · Vocabulary in context

| Word | Example |
|---|---|
| **model** /ˈmɒdl/ | This **model** keeps wages fixed so we can see the effect of one change. |
| **gradient** /ˈgreɪdɪənt/ | The **gradient** of a distance-time graph gives the speed. $\frac{-}{}$ |
| **parallel** /ˈpærəlel/ | **Parallel** lines have equal gradients and never meet. |
| **perpendicular** /ˌpɜːpənˈdɪkjʊlə/ | The wall is **perpendicular** to the floor. |
| **linear model** /ˈlɪnɪə ˈmɒdl/ | A **linear model** $y = mx + c$ changes at a constant rate. $y = mx + c$ |
| **function** /ˈfʌŋkʃn/ | A **function** returns a value. |
| **domain** /dəˈmeɪn/ | Leave zero out of the **domain** when x is on the bottom of a fraction. $x$ |
| **range** /reɪndʒ/ | The **range** of $f(x) = x^2$ is all values greater than or equal to zero. $f(x) = x^2$ |
| **inverse function** /ɪnˈvɜːs ˈfʌŋkʃn/ | The **inverse function** undoes the original function. |
| **zero** /ˈzɪərəʊ/ | A **zero** of a function is where its graph crosses the x-axis. $x$ |
| **asymptote** /ˈæsɪmptəʊt/ | The graph of $y = e^x$ has a horizontal **asymptote** at $y = 0$. $y = e^x$ $y = 0$ |
| **quadratic model** /kwɒˈdrætɪk ˈmɒdl/ | A **quadratic model** describes the path of a thrown ball. |



exercises.lol exercises.com.cn

| Word | Example |
| --- | --- |
| **axis of symmetry** /ˈæksɪs ɒv ˈsɪmətri/ | The **axis of symmetry** of $y = x^2$ is the y-axis.<br>$y = x^2$ y |
| **exponential model** /ˌekspəˈnenʃl ˈmɒdl/ | An **exponential model** $y = ab^x$ fits fast growth.<br>$y = ab^x$ |
| **directly proportional** /daɪˈrektli prəˈpɔːʃənl/ | The cost of petrol is **directly proportional** to the litres you buy. |
| **inversely proportional** /ɪnˈvɜːsli prəˈpɔːʃənl/ | Journey time is **inversely proportional** to speed. |
| **sinusoidal model** /ˌsaɪnəˈsɔɪdl ˈmɒdl/ | A **sinusoidal model** can describe the height of the tide. |
| **period** /ˈpɪərɪəd/ | The **period** of the wave is 0.02 s.<br>0.02 s |
| **amplitude** /ˈæmplɪtjuːd/ | Loud sounds have a large **amplitude**. |
| **principal axis** /ˈprɪnsɪpl ˈæksɪs/ | The graph $y = 3 \sin x + 1$ has **principal axis** $y = 1$.<br>$y = 3 \sin x + 1$ $y = 1$ |
| **assumption** /əˈsʌmpʃn/ | The argument rests on one **assumption**: that all students have a phone. |
| **interpolation** /ɪnˌtɜːpəˈleɪʃn/ | **Interpolation** estimates a value inside the range of the data. |
| **extrapolation** /ekˈstræpəleɪʃn/ | Predicting beyond the data is **extrapolation**. |
| **composite function** /ˈkɒmpəzɪt ˈfʌŋkʃn/ | A **composite function** fg(x) means f(g(x)): apply g first.<br>fg(x) f(g(x)) g |
| **logistic model** /ləˈdʒɪstɪk ˈmɒdl/ | A **logistic model** grows fast at first, then levels off. |



exercises.lol exercises.com.cn

| Word | Example |
| --- | --- |
| **carrying capacity**<br>/ˈkærɪŋ kəˈpæsɪti/ | The **carrying capacity** is the largest population the area can support. |
| **semi-log graph** | On a **semi-log graph**, exponential data form a straight line. |
| **log-log graph** | On a **log-log graph**, power-law data form a straight line. |



exercises.lol exercises.com.cn