**知识框架**

**why**

**Chinese knowledge elements:**

***汉字(梳理)***

**Wa**

**阴平阳平上声去声**

**曲调melody: l3 3| 3 5| 214| 5 1l**

**样品字sample character:** [挖9](http://xh.5156edu.com/html3/7703.html)[娃9](http://xh.5156edu.com/html3/6458.html) [瓦4](http://xh.5156edu.com/html3/13227.html) [袜10](http://xh.5156edu.com/html3/16045.html)

**号表法no.indicator:** 1 2 3 4

**全家福family photo:**

|  |  |
| --- | --- |
| **纲（四声）** | **目（汉字梳理）** |
| Wa 1 | [屲4](http://xh.5156edu.com/html3/7017.html)  [凹5](http://xh.5156edu.com/html3/2687.html)  [穵6](http://xh.5156edu.com/html3/15921.html)[挖9](http://xh.5156edu.com/html3/7703.html)  [劸8](http://xh.5156edu.com/html3/2605.html)[洼9](http://xh.5156edu.com/html3/8440.html)[哇9](http://xh.5156edu.com/html3/5575.html)[窐11](http://xh.5156edu.com/html3/15952.html)[蛙12](http://xh.5156edu.com/html3/16386.html)[漥14](http://xh.5156edu.com/html3/8975.html)[窪14](http://xh.5156edu.com/html3/15976.html)[鼃18](http://xh.5156edu.com/html3/22215.html)  [娲10](http://xh.5156edu.com/html3/6510.html)[媧11](http://xh.5156edu.com/html3/6563.html)  [窊10](http://xh.5156edu.com/html3/15939.html)[畖10](http://xh.5156edu.com/html3/15866.html)[搲13](http://xh.5156edu.com/html3/8015.html)[溛13](http://xh.5156edu.com/html3/8887.html)[攨23](http://xh.5156edu.com/html3/8218.html)  [啘11](http://xh.5156edu.com/html3/5720.html)  [嗗12](http://xh.5156edu.com/html3/5822.html)  [瓾12](http://xh.5156edu.com/html3/13252.html)  [韈23](http://xh.5156edu.com/html3/20912.html) |
| Wa 2 | [娃9](http://xh.5156edu.com/html3/6458.html) |
| Wa 3 | [瓦4](http://xh.5156edu.com/html3/13227.html)[邷6](http://xh.5156edu.com/html3/2210.html)[佤6](http://xh.5156edu.com/html3/2790.html)[咓7](http://xh.5156edu.com/html3/5472.html)[砙9](http://xh.5156edu.com/html3/15459.html) |
| Wa 4 | [瓦4](http://xh.5156edu.com/html3/13227.html)  [袜10](http://xh.5156edu.com/html3/16045.html)  [聉11](http://xh.5156edu.com/html3/16768.html)  [嗢12](http://xh.5156edu.com/html3/5793.html)[腽13](http://xh.5156edu.com/html3/14070.html)[膃14](http://xh.5156edu.com/html3/14109.html)  [襪19](http://xh.5156edu.com/html3/16216.html)[韤23](http://xh.5156edu.com/html3/21034.html) |
| ? | [瓸10](http://xh.5156edu.com/html3/13245.html)[甅13](http://xh.5156edu.com/html3/13259.html) |

**Wai**

**阴平阳平上声去声**

**曲调melody: l3 3| 3 5| 214| 5 1l**

**样品字sample character:** [歪9](http://xh.5156edu.com/html3/14214.html) [崴12](http://xh.5156edu.com/html3/7218.html) [外5](http://xh.5156edu.com/html3/9955.html)

**号表法no.indicator:** 1 2 3 4

**全家福family photo:**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | **纲（四声）** | **目（汉字梳理）** | | Wai 1 | [咼8](http://xh.5156edu.com/html3/5514.html)[10](http://xh.5156edu.com/html3/22461.html)[喎11](http://xh.5156edu.com/html3/5721.html)  [歪9](http://xh.5156edu.com/html3/14214.html)  [竵18](http://xh.5156edu.com/html3/14773.html) | | Wai 3 | [歪9](http://xh.5156edu.com/html3/14214.html)  [崴12](http://xh.5156edu.com/html3/7218.html) | | Wai 4 | [外5](http://xh.5156edu.com/html3/9955.html)  [顡20](http://xh.5156edu.com/html3/21153.html) | |

**Wan**

**阴平阳平上声去声**

**曲调melody: l3 3| 3 5| 214| 5 1l**

**样品字sample character:** [弯9](http://xh.5156edu.com/html3/5051.html) [丸3](http://xh.5156edu.com/html3/1642.html)[碗13](http://xh.5156edu.com/html3/15568.html) [万3](http://xh.5156edu.com/html3/1672.html)

**号表法no.indicator:** 1 2 3 4

**全家福family photo:**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | **纲（四声）** | **目（汉字梳理）** | | Wan 1 | [弯9](http://xh.5156edu.com/html3/5051.html)[湾12](http://xh.5156edu.com/html3/8717.html)[塆12](http://xh.5156edu.com/html3/9682.html)[彎22](http://xh.5156edu.com/html3/5084.html)[壪25](http://xh.5156edu.com/html3/9877.html)[灣25](http://xh.5156edu.com/html3/9248.html)  [剜10](http://xh.5156edu.com/html3/2031.html)[帵11](http://xh.5156edu.com/html3/5295.html)[睕13](http://xh.5156edu.com/html3/14971.html)[蜿14](http://xh.5156edu.com/html3/16463.html)[豌15](http://xh.5156edu.com/html3/18433.html)  [婠11](http://xh.5156edu.com/html3/6554.html)  [潫15](http://xh.5156edu.com/html3/9013.html) | | Wan 2 | [丸3](http://xh.5156edu.com/html3/1642.html)[芄6](http://xh.5156edu.com/html3/3632.html)[汍6](http://xh.5156edu.com/html3/8245.html)[纨6](http://xh.5156edu.com/html3/9266.html)[紈9紈9](http://xh.5156edu.com/html3/17155.html)  [刓6](http://xh.5156edu.com/html3/1966.html)[岏7](http://xh.5156edu.com/html3/7057.html)[抏7](http://xh.5156edu.com/html3/7589.html)[玩8](http://xh.5156edu.com/html3/13303.html)[顽10](http://xh.5156edu.com/html3/22379.html)[貦11](http://xh.5156edu.com/html3/18127.html)[烷11](http://xh.5156edu.com/html3/11019.html)[頑13](http://xh.5156edu.com/html3/21064.html)[翫15](http://xh.5156edu.com/html3/17615.html)  [完7](http://xh.5156edu.com/html3/6233.html)[捖10](http://xh.5156edu.com/html3/7790.html) | | Wan 3 | [宛8](http://xh.5156edu.com/html3/6248.html)[倇10](http://xh.5156edu.com/html3/3085.html)[埦11](http://xh.5156edu.com/html3/9666.html)[惋11](http://xh.5156edu.com/html3/10189.html)[菀11](http://xh.5156edu.com/html3/3985.html)[婉11](http://xh.5156edu.com/html3/6555.html)[晼12](http://xh.5156edu.com/html3/12881.html)[琬12](http://xh.5156edu.com/html3/13428.html)[椀12](http://xh.5156edu.com/html3/11877.html)[碗13](http://xh.5156edu.com/html3/15568.html)  [畹13](http://xh.5156edu.com/html3/15894.html)[綩14](http://xh.5156edu.com/html3/17339.html)[踠15](http://xh.5156edu.com/html3/19419.html)  [莞10](http://xh.5156edu.com/html3/3867.html)[唍10](http://xh.5156edu.com/html3/5677.html)[脘11](http://xh.5156edu.com/html3/13995.html)[晥11](http://xh.5156edu.com/html3/12855.html)[皖12](http://xh.5156edu.com/html3/14255.html)  [挽10](http://xh.5156edu.com/html3/7761.html)[梚11](http://xh.5156edu.com/html3/11807.html)[晩12](http://xh.5156edu.com/html3/12880.html)[輓14](http://xh.5156edu.com/html3/18323.html)[鋔15](http://xh.5156edu.com/html3/19903.html)  [盌10](http://xh.5156edu.com/html3/14805.html)  [绾11](http://xh.5156edu.com/html3/9346.html)[綰14](http://xh.5156edu.com/html3/17320.html)  [萖11](http://xh.5156edu.com/html3/4017.html) | | Wan 4 | [万3](http://xh.5156edu.com/html3/1672.html)[萬12](http://xh.5156edu.com/html3/4088.html)[澫15](http://xh.5156edu.com/html3/9014.html)[贎19](http://xh.5156edu.com/html3/18224.html)  [卐4](http://xh.5156edu.com/html3/3354.html)[卍4](http://xh.5156edu.com/html3/3356.html)  [忨7](http://xh.5156edu.com/html3/10025.html)[妧7](http://xh.5156edu.com/html3/6397.html)  [捥11](http://xh.5156edu.com/html3/7879.html)[腕12](http://xh.5156edu.com/html3/14030.html)  [脕11](http://xh.5156edu.com/html3/14013.html)  [蔓14](http://xh.5156edu.com/html3/4259.html)[蟃17](http://xh.5156edu.com/html3/16630.html)  [輐14](http://xh.5156edu.com/html3/18324.html)  [鋄15](http://xh.5156edu.com/html3/19891.html)[錽16](http://xh.5156edu.com/html3/19960.html) [鎫18](http://xh.5156edu.com/html3/20082.html)  [薍16](http://xh.5156edu.com/html3/4423.html)  [瞣16](http://xh.5156edu.com/html3/15024.html)[贃18](http://xh.5156edu.com/html3/18215.html) | | ? | [乛1](http://xh.5156edu.com/html3/1708.html)[杤7](http://xh.5156edu.com/html3/11464.html)[笂9](http://xh.5156edu.com/html3/17747.html)[琓11](http://xh.5156edu.com/html3/13406.html) | |

**Wang**

**阴平阳平上声去声**

**曲调melody: l3 3| 3 5| 214| 5 1l**

**样品字sample character:** [汪7](http://xh.5156edu.com/html3/8293.html) [王4](http://xh.5156edu.com/html3/13280.html)[网6](http://xh.5156edu.com/html3/2558.html) [望11](http://xh.5156edu.com/html3/13996.html)

**号表法no.indicator:** 1 2 3 4

**全家福family photo:**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | **纲（四声）** | **目（汉字梳理）** | | Wang 1 | [尢3](http://xh.5156edu.com/html3/10425.html)  [尣4](http://xh.5156edu.com/html3/13277.html)  [尪7](http://xh.5156edu.com/html3/10430.html)[汪7](http://xh.5156edu.com/html3/8293.html)[尫7](http://xh.5156edu.com/html3/9951.html)[尩8](http://xh.5156edu.com/html3/13279.html) | | Wang 2 | [亾3](http://xh.5156edu.com/html3/2698.html)[兦3](http://xh.5156edu.com/html3/3344.html)  [亡3](http://xh.5156edu.com/html3/3398.html)[莣10](http://xh.5156edu.com/html3/3930.html)  [王4](http://xh.5156edu.com/html3/13280.html)[仼6](http://xh.5156edu.com/html3/2820.html)[蚟10](http://xh.5156edu.com/html3/16317.html) | | Wang 3 | [罓4](http://xh.5156edu.com/html3/2550.html)  [罒5](http://xh.5156edu.com/html3/15773.html)  [网6](http://xh.5156edu.com/html3/2558.html)[罔8](http://xh.5156edu.com/html3/2561.html)[惘11](http://xh.5156edu.com/html3/10190.html)[菵11](http://xh.5156edu.com/html3/3986.html)[辋12](http://xh.5156edu.com/html3/10669.html)[棢12](http://xh.5156edu.com/html3/11920.html)[蛧12](http://xh.5156edu.com/html3/16387.html)[蝄14](http://xh.5156edu.com/html3/16470.html)[網14](http://xh.5156edu.com/html3/17308.html)[輞15](http://xh.5156edu.com/html3/18338.html)[誷15](http://xh.5156edu.com/html3/18879.html)[魍17](http://xh.5156edu.com/html3/20979.html)  [彺7](http://xh.5156edu.com/html3/4601.html)[枉8](http://xh.5156edu.com/html3/11498.html) [徃8](http://xh.5156edu.com/html3/4608.html)  [往8](http://xh.5156edu.com/html3/4606.html)[暀12](http://xh.5156edu.com/html3/12882.html)  [瀇17](http://xh.5156edu.com/html3/9147.html) | | Wang 4 | [王4](http://xh.5156edu.com/html3/13280.html)[迋7](http://xh.5156edu.com/html3/4722.html)[旺8](http://xh.5156edu.com/html3/12758.html)  [妄6](http://xh.5156edu.com/html3/6353.html)[忘7](http://xh.5156edu.com/html3/13632.html)  [徍9](http://xh.5156edu.com/html3/4619.html)  [望11](http://xh.5156edu.com/html3/13996.html)[朢14](http://xh.5156edu.com/html3/14104.html) | |

**Wei**

**阴平阳平上声去声**

**曲调melody: l3 3| 3 5| 214| 5 1l**

**样品字sample character:** [威9](http://xh.5156edu.com/html3/6459.html)[韦4](http://xh.5156edu.com/html3/13597.html) [伟6](http://xh.5156edu.com/html3/2791.html) [位7](http://xh.5156edu.com/html3/2854.html)

**号表法no.indicator:** 1 2 3 4

**全家福family photo:**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | **纲（四声）** | **目（汉字梳理）** | | Wei 1 | [厃4](http://xh.5156edu.com/html3/1877.html)[危6](http://xh.5156edu.com/html3/10756.html)  [委8](http://xh.5156edu.com/html3/6416.html)[逶11](http://xh.5156edu.com/html3/4804.html)[蜲14](http://xh.5156edu.com/html3/16499.html)[覣15](http://xh.5156edu.com/html3/18483.html)[巍20](http://xh.5156edu.com/html3/7358.html)  [威9](http://xh.5156edu.com/html3/6459.html)[隇11](http://xh.5156edu.com/html3/2394.html)[喴12](http://xh.5156edu.com/html3/5832.html)[葳12](http://xh.5156edu.com/html3/4080.html)[媙12](http://xh.5156edu.com/html3/6655.html)[崴12](http://xh.5156edu.com/html3/7218.html)[揻12](http://xh.5156edu.com/html3/7914.html)[楲13](http://xh.5156edu.com/html3/12013.html)[蝛15](http://xh.5156edu.com/html3/16549.html)[縅15](http://xh.5156edu.com/html3/17388.html)[鰄20](http://xh.5156edu.com/html3/22064.html)  [烓10](http://xh.5156edu.com/html3/11002.html)  [隈11](http://xh.5156edu.com/html3/2370.html)[偎11](http://xh.5156edu.com/html3/3111.html)[葨12](http://xh.5156edu.com/html3/4140.html)[嵔12](http://xh.5156edu.com/html3/7244.html)[揋12](http://xh.5156edu.com/html3/7951.html)[愄12](http://xh.5156edu.com/html3/10253.html)[椳13](http://xh.5156edu.com/html3/11961.html)[煨13](http://xh.5156edu.com/html3/11093.html)[鳂17](http://xh.5156edu.com/html3/20601.html)[鰃20](http://xh.5156edu.com/html3/22042.html)  [溦13](http://xh.5156edu.com/html3/8838.html)[微13](http://xh.5156edu.com/html3/4651.html)[薇16](http://xh.5156edu.com/html3/4395.html)[癓18](http://xh.5156edu.com/html3/15283.html)[霺21](http://xh.5156edu.com/html3/20714.html)  [詴13](http://xh.5156edu.com/html3/18798.html)  [燰17](http://xh.5156edu.com/html3/11237.html) | | Wei 2 | [囗3](http://xh.5156edu.com/html3/9878.html)[囲7](http://xh.5156edu.com/html3/9905.html)  [为4](http://xh.5156edu.com/html3/1751.html)[沩7](http://xh.5156edu.com/html3/8294.html)[為9](http://xh.5156edu.com/html3/10591.html)[溈12](http://xh.5156edu.com/html3/8747.html)[爲12](http://xh.5156edu.com/html3/14197.html)[鄬14](http://xh.5156edu.com/html3/2458.html)[潙15](http://xh.5156edu.com/html3/9040.html)  [韦4](http://xh.5156edu.com/html3/13597.html)[围7](http://xh.5156edu.com/html3/9898.html)[闱7](http://xh.5156edu.com/html3/6183.html)[违7](http://xh.5156edu.com/html3/4711.html)[帏7](http://xh.5156edu.com/html3/5248.html)[韋9](http://xh.5156edu.com/html3/21009.html)[涠10](http://xh.5156edu.com/html3/8520.html)[媁12](http://xh.5156edu.com/html3/6654.html)[圍12](http://xh.5156edu.com/html3/9933.html)[喡12](http://xh.5156edu.com/html3/5831.html)[幃12](http://xh.5156edu.com/html3/5306.html)[違12](http://xh.5156edu.com/html3/4838.html)[湋12](http://xh.5156edu.com/html3/8718.html)[潿15](http://xh.5156edu.com/html3/9024.html)[鍏17](http://xh.5156edu.com/html3/20036.html)[闈17](http://xh.5156edu.com/html3/20350.html)  [圩6](http://xh.5156edu.com/html3/9433.html) [壝18](http://xh.5156edu.com/html3/9861.html)  [洈9](http://xh.5156edu.com/html3/8441.html)[峗9](http://xh.5156edu.com/html3/7132.html)[峞9](http://xh.5156edu.com/html3/7133.html)[桅10](http://xh.5156edu.com/html3/11674.html)[鮠17](http://xh.5156edu.com/html3/21939.html)  [帷11](http://xh.5156edu.com/html3/5291.html)[唯11](http://xh.5156edu.com/html3/5722.html)[维11](http://xh.5156edu.com/html3/9347.html)[惟11](http://xh.5156edu.com/html3/10191.html)[琟12](http://xh.5156edu.com/html3/13447.html)[維14](http://xh.5156edu.com/html3/17316.html)[潍14](http://xh.5156edu.com/html3/8921.html)[蓶14](http://xh.5156edu.com/html3/4316.html)[醀15](http://xh.5156edu.com/html3/19152.html)[濰17](http://xh.5156edu.com/html3/9134.html)  [嵬12](http://xh.5156edu.com/html3/7219.html)[犩21](http://xh.5156edu.com/html3/12437.html)  [矀18](http://xh.5156edu.com/html3/15055.html)[覹20](http://xh.5156edu.com/html3/18505.html)  [欈22](http://xh.5156edu.com/html3/12399.html) | | Wei 3 | [伟6](http://xh.5156edu.com/html3/2791.html)[苇7](http://xh.5156edu.com/html3/3676.html)[纬7](http://xh.5156edu.com/html3/9282.html)[炜8](http://xh.5156edu.com/html3/10912.html)[玮8](http://xh.5156edu.com/html3/13304.html)[偉11](http://xh.5156edu.com/html3/3127.html)[愇12](http://xh.5156edu.com/html3/10254.html)[葦12](http://xh.5156edu.com/html3/4096.html)[徫12](http://xh.5156edu.com/html3/4650.html)[葦12](http://xh.5156edu.com/html3/4096.html)[椲13](http://xh.5156edu.com/html3/11990.html)  [暐13](http://xh.5156edu.com/html3/12892.html)[煒13](http://xh.5156edu.com/html3/11098.html)[瑋13](http://xh.5156edu.com/html3/13482.html)[韪13](http://xh.5156edu.com/html3/13601.html)[緯15](http://xh.5156edu.com/html3/17371.html)[韑15](http://xh.5156edu.com/html3/21015.html)[颹18](http://xh.5156edu.com/html3/20802.html)[韙18](http://xh.5156edu.com/html3/21020.html)[韡19](http://xh.5156edu.com/html3/21027.html)  [伪6](http://xh.5156edu.com/html3/2792.html)[偽11](http://xh.5156edu.com/html3/3126.html)[蒍12](http://xh.5156edu.com/html3/4093.html)[僞14](http://xh.5156edu.com/html3/3257.html)[寪15](http://xh.5156edu.com/html3/6332.html)[蔿15](http://xh.5156edu.com/html3/4375.html)[儰17](http://xh.5156edu.com/html3/3325.html)  [芛7](http://xh.5156edu.com/html3/3699.html)  [尾7](http://xh.5156edu.com/html3/7407.html)[浘10](http://xh.5156edu.com/html3/8566.html)[娓10](http://xh.5156edu.com/html3/6511.html)[荱10](http://xh.5156edu.com/html3/3931.html)[梶11](http://xh.5156edu.com/html3/11808.html)[艉13](http://xh.5156edu.com/html3/17693.html)  [委8](http://xh.5156edu.com/html3/6416.html)[诿10](http://xh.5156edu.com/html3/3526.html)[萎11](http://xh.5156edu.com/html3/3987.html)[崣11](http://xh.5156edu.com/html3/7204.html)[痿13](http://xh.5156edu.com/html3/15181.html)[諉15](http://xh.5156edu.com/html3/18848.html)  [洧9](http://xh.5156edu.com/html3/8442.html)[痏11](http://xh.5156edu.com/html3/15138.html)[鲔14](http://xh.5156edu.com/html3/20554.html)[鮪17](http://xh.5156edu.com/html3/21946.html)  [隗11](http://xh.5156edu.com/html3/2363.html)[廆12](http://xh.5156edu.com/html3/5169.html)  [硊11](http://xh.5156edu.com/html3/15518.html)[頠15](http://xh.5156edu.com/html3/21082.html)  [骩11](http://xh.5156edu.com/html3/20919.html)[骫12](http://xh.5156edu.com/html3/20921.html)[骪12](http://xh.5156edu.com/html3/20922.html)  [猥12](http://xh.5156edu.com/html3/6937.html)[渨12](http://xh.5156edu.com/html3/8792.html)[腲13](http://xh.5156edu.com/html3/14090.html)[鍡17](http://xh.5156edu.com/html3/20037.html)  [撱14](http://xh.5156edu.com/html3/8064.html)  [嶉14](http://xh.5156edu.com/html3/7290.html)[踓15](http://xh.5156edu.com/html3/19428.html)  [薳16](http://xh.5156edu.com/html3/4396.html)  [濻17](http://xh.5156edu.com/html3/9139.html)[瀢18](http://xh.5156edu.com/html3/9169.html)  [亹22](http://xh.5156edu.com/html3/3425.html)[斖24](http://xh.5156edu.com/html3/13619.html) | | Wei 4 | [卫3](http://xh.5156edu.com/html3/2526.html)[衛15](http://xh.5156edu.com/html3/22504.html)[衞16](http://xh.5156edu.com/html3/25559.html)[讆22](http://xh.5156edu.com/html3/19044.html)[躗22](http://xh.5156edu.com/html3/19541.html)[躛23](http://xh.5156edu.com/html3/19546.html)[讏23](http://xh.5156edu.com/html3/19060.html)  [为4](http://xh.5156edu.com/html3/1751.html)  [未5](http://xh.5156edu.com/html3/11406.html)[苿8](http://xh.5156edu.com/html3/3762.html)[味8](http://xh.5156edu.com/html3/5508.html)[菋11](http://xh.5156edu.com/html3/3988.html)[鮇16](http://xh.5156edu.com/html3/21912.html)  [位7](http://xh.5156edu.com/html3/2854.html)  [胃9](http://xh.5156edu.com/html3/13909.html)[谓11](http://xh.5156edu.com/html3/3545.html)[媦12](http://xh.5156edu.com/html3/6615.html)[猬12](http://xh.5156edu.com/html3/6938.html)[渭12](http://xh.5156edu.com/html3/8719.html)[煟13](http://xh.5156edu.com/html3/11125.html)[蝟15](http://xh.5156edu.com/html3/16525.html)[緭15](http://xh.5156edu.com/html3/17387.html)[謂16](http://xh.5156edu.com/html3/18894.html)  [畏9](http://xh.5156edu.com/html3/15851.html)[喂12](http://xh.5156edu.com/html3/5794.html)[碨14](http://xh.5156edu.com/html3/15604.html)[餵17](http://xh.5156edu.com/html3/20475.html)  [軎10](http://xh.5156edu.com/html3/18263.html)  [叞10](http://xh.5156edu.com/html3/3611.html)[尉11](http://xh.5156edu.com/html3/4918.html)[蔚14](http://xh.5156edu.com/html3/4266.html)[犚15](http://xh.5156edu.com/html3/12434.html)[慰15](http://xh.5156edu.com/html3/13747.html)[罻16](http://xh.5156edu.com/html3/15810.html)[螱17](http://xh.5156edu.com/html3/16635.html)[褽17](http://xh.5156edu.com/html3/17565.html)[藯18](http://xh.5156edu.com/html3/4501.html)[鳚19](http://xh.5156edu.com/html3/20616.html)[霨19](http://xh.5156edu.com/html3/20695.html)  [硙11](http://xh.5156edu.com/html3/15526.html)[磑15](http://xh.5156edu.com/html3/15635.html)  [遗12](http://xh.5156edu.com/html3/4831.html)  [蜼14](http://xh.5156edu.com/html3/16498.html)  [熭15](http://xh.5156edu.com/html3/11179.html)[轊18](http://xh.5156edu.com/html3/18379.html)[鏏19](http://xh.5156edu.com/html3/20134.html)  [餧16](http://xh.5156edu.com/html3/20461.html)[魏17](http://xh.5156edu.com/html3/20980.html)[蘶20](http://xh.5156edu.com/html3/4559.html)  [懀16](http://xh.5156edu.com/html3/10374.html)  [饖21](http://xh.5156edu.com/html3/20515.html) | | ? | [捤10](http://xh.5156edu.com/html3/7791.html)[墛14](http://xh.5156edu.com/html3/9801.html)[嶶16](http://xh.5156edu.com/html3/7338.html) | |

**Wen**

**阴平阳平上声去声**

**曲调melody: l3 3| 3 5| 214| 5 1l**

**样品字sample character:** [温12](http://xh.5156edu.com/html3/8720.html)[文4](http://xh.5156edu.com/html3/13604.html) [稳14](http://xh.5156edu.com/html3/14412.html) [问6](http://xh.5156edu.com/html3/6175.html)

**号表法no.indicator:** 1 2 3 4

**全家福family photo:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | **纲（四声）** | **目（汉字梳理）** | | Wen 1 | [昷9](http://xh.5156edu.com/html3/12811.html)[温12](http://xh.5156edu.com/html3/8720.html)[辒13](http://xh.5156edu.com/html3/10677.html)[殟13](http://xh.5156edu.com/html3/10719.html)[榅13](http://xh.5156edu.com/html3/12014.html)[瑥13](http://xh.5156edu.com/html3/13483.html)[瘟14](http://xh.5156edu.com/html3/15209.html)[緼15](http://xh.5156edu.com/html3/17349.html)[蕰15](http://xh.5156edu.com/html3/4335.html)[豱16](http://xh.5156edu.com/html3/18630.html)  [輼16](http://xh.5156edu.com/html3/18360.html)[鳁17](http://xh.5156edu.com/html3/20602.html)[鞰18](http://xh.5156edu.com/html3/20890.html)[鰛20](http://xh.5156edu.com/html3/22045.html)  [溫13](http://xh.5156edu.com/html3/8888.html)[榲14](http://xh.5156edu.com/html3/12050.html)[轀17](http://xh.5156edu.com/html3/18376.html)[鰮21](http://xh.5156edu.com/html3/22091.html) | | Wen 2 | [文4](http://xh.5156edu.com/html3/13604.html)[芠7](http://xh.5156edu.com/html3/3700.html)[彣7](http://xh.5156edu.com/html3/7381.html)[纹7](http://xh.5156edu.com/html3/9283.html)[炆8](http://xh.5156edu.com/html3/10916.html)[蚊10](http://xh.5156edu.com/html3/16308.html)[蚉10](http://xh.5156edu.com/html3/16318.html)[紋10](http://xh.5156edu.com/html3/17172.html)[珳11](http://xh.5156edu.com/html3/13407.html)[雯12](http://xh.5156edu.com/html3/20637.html)[馼14](http://xh.5156edu.com/html3/21309.html)  [鳼15](http://xh.5156edu.com/html3/21599.html)[鴍15](http://xh.5156edu.com/html3/21600.html)[魰15](http://xh.5156edu.com/html3/21906.html)[螡16](http://xh.5156edu.com/html3/16579.html)[鼤17](http://xh.5156edu.com/html3/22248.html) [駇14](http://xh.5156edu.com/html3/21306.html)  [闻9](http://xh.5156edu.com/html3/6195.html)[阌11](http://xh.5156edu.com/html3/6205.html)[聞14](http://xh.5156edu.com/html3/16794.html)[瘒14](http://xh.5156edu.com/html3/15219.html)[閿16](http://xh.5156edu.com/html3/20332.html)[閺16](http://xh.5156edu.com/html3/20341.html)[闅17](http://xh.5156edu.com/html3/20347.html)[闦21](http://xh.5156edu.com/html3/20378.html)  [蟁17](http://xh.5156edu.com/html3/16636.html)  [繧18](http://xh.5156edu.com/html3/17476.html) | | Wen 3 | [刎6](http://xh.5156edu.com/html3/1967.html)[伆6](http://xh.5156edu.com/html3/2822.html)[吻7](http://xh.5156edu.com/html3/5442.html)[肳8](http://xh.5156edu.com/html3/13887.html)[脗11](http://xh.5156edu.com/html3/14000.html)  [呅7](http://xh.5156edu.com/html3/5466.html)[抆7](http://xh.5156edu.com/html3/7590.html)[紊10](http://xh.5156edu.com/html3/17071.html)  [呡8](http://xh.5156edu.com/html3/5530.html)  [桽11](http://xh.5156edu.com/html3/11809.html)  [稳14](http://xh.5156edu.com/html3/14412.html)[穏17](http://xh.5156edu.com/html3/14466.html)[穩19](http://xh.5156edu.com/html3/14476.html) | | Wen 4 | [问6](http://xh.5156edu.com/html3/6175.html)[問11問11](http://xh.5156edu.com/html3/5735.html)  [妏7](http://xh.5156edu.com/html3/6398.html)[汶7](http://xh.5156edu.com/html3/8279.html)[渂11](http://xh.5156edu.com/html3/8659.html)  [免7](http://xh.5156edu.com/html3/1938.html)[莬10](http://xh.5156edu.com/html3/3914.html)[絻13](http://xh.5156edu.com/html3/17262.html)  [揾12](http://xh.5156edu.com/html3/7915.html)[搵13](http://xh.5156edu.com/html3/8016.html)  [顐18](http://xh.5156edu.com/html3/21135.html)  [璺20](http://xh.5156edu.com/html3/16259.html) | | ? | [塭12](http://xh.5156edu.com/html3/9711.html)[鎾17](http://xh.5156edu.com/html3/20038.html)[饂17](http://xh.5156edu.com/html3/20484.html) | |

**Weng**

**阴平阳平上声去声**

**曲调melody: l3 3| 3 5| 214| 5 1l**

**样品字sample character:** [翁10](http://xh.5156edu.com/html3/17577.html) [奣12](http://xh.5156edu.com/html3/4988.html) [瓮8](http://xh.5156edu.com/html3/13232.html)

**号表法no.indicator:** 1 2 3 4

**全家福family photo:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | **纲（四声）** | **目（汉字梳理）** | | Weng 1 | [翁10](http://xh.5156edu.com/html3/17577.html)[嗡13](http://xh.5156edu.com/html3/5861.html)[滃13](http://xh.5156edu.com/html3/8839.html)[鹟15](http://xh.5156edu.com/html3/15372.html)[螉16](http://xh.5156edu.com/html3/16581.html)[聬16](http://xh.5156edu.com/html3/16807.html)[鎓18](http://xh.5156edu.com/html3/20049.html)[鶲21](http://xh.5156edu.com/html3/21772.html) | | Weng 3 | [勜12](http://xh.5156edu.com/html3/2636.html)[嵡13](http://xh.5156edu.com/html3/7276.html)[蓊13](http://xh.5156edu.com/html3/4189.html)[滃13](http://xh.5156edu.com/html3/8839.html)[塕13](http://xh.5156edu.com/html3/9734.html)[暡14](http://xh.5156edu.com/html3/12923.html)[瞈15](http://xh.5156edu.com/html3/15010.html)  [奣12](http://xh.5156edu.com/html3/4988.html)  [攚19](http://xh.5156edu.com/html3/8194.html) | | Weng 4 | [瓮8](http://xh.5156edu.com/html3/13232.html)[甕17](http://xh.5156edu.com/html3/13274.html)[罋19](http://xh.5156edu.com/html3/16843.html)  [蕹16](http://xh.5156edu.com/html3/4397.html)  [齆24](http://xh.5156edu.com/html3/22282.html) | |

**Wo**

**阴平阳平上声去声**

**曲调melody: l3 3| 3 5| 214| 5 1l**

**样品字sample character:** [涡10](http://xh.5156edu.com/html3/8491.html) [我7](http://xh.5156edu.com/html3/10827.html) [卧8](http://xh.5156edu.com/html3/1871.html)

**号表法no.indicator:** 1 2 3 4

**全家福family photo:**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | **纲（四声）** | **目（汉字梳理）** | | Wo 1 | [挝9](http://xh.5156edu.com/html3/7704.html)  [涡10](http://xh.5156edu.com/html3/8491.html)[莴10](http://xh.5156edu.com/html3/3886.html)[萵11](http://xh.5156edu.com/html3/4041.html)[猧11](http://xh.5156edu.com/html3/6927.html)[渦11](http://xh.5156edu.com/html3/8626.html)[窝12](http://xh.5156edu.com/html3/15959.html)[窩13](http://xh.5156edu.com/html3/15967.html)[蜗13](http://xh.5156edu.com/html3/16422.html)[蝸14](http://xh.5156edu.com/html3/16485.html)  [倭10](http://xh.5156edu.com/html3/3044.html)[唩11](http://xh.5156edu.com/html3/5756.html)[涹11](http://xh.5156edu.com/html3/8675.html)[踒15](http://xh.5156edu.com/html3/19420.html)  [喔12](http://xh.5156edu.com/html3/5795.html) | | Wo 3 | [我7](http://xh.5156edu.com/html3/10827.html)  [婑11](http://xh.5156edu.com/html3/6593.html)  [婐11](http://xh.5156edu.com/html3/6601.html)[捰11](http://xh.5156edu.com/html3/7865.html) | | Wo 4 | [仴6](http://xh.5156edu.com/html3/2821.html)[枂8](http://xh.5156edu.com/html3/11528.html)  [沃7](http://xh.5156edu.com/html3/8295.html)  [肟7](http://xh.5156edu.com/html3/13839.html)  [卧8](http://xh.5156edu.com/html3/1871.html)[臥8](http://xh.5156edu.com/html3/16266.html)  [捾11](http://xh.5156edu.com/html3/7880.html)  [涴11](http://xh.5156edu.com/html3/8607.html)[焥12](http://xh.5156edu.com/html3/11054.html)  [偓11](http://xh.5156edu.com/html3/3112.html)[幄12](http://xh.5156edu.com/html3/5304.html)[媉12](http://xh.5156edu.com/html3/6656.html)[渥12](http://xh.5156edu.com/html3/8721.html)[握12](http://xh.5156edu.com/html3/7916.html)[楃13](http://xh.5156edu.com/html3/12015.html)[腛13](http://xh.5156edu.com/html3/14091.html)[龌17](http://xh.5156edu.com/html3/19574.html)[齷24](http://xh.5156edu.com/html3/22328.html)  [硪12](http://xh.5156edu.com/html3/15531.html)  [斡14](http://xh.5156edu.com/html3/10751.html)[濣17](http://xh.5156edu.com/html3/9148.html)  [瞃14](http://xh.5156edu.com/html3/14990.html)  [臒17](http://xh.5156edu.com/html3/14171.html)[瓁17](http://xh.5156edu.com/html3/13563.html) | | ? | [遤13](http://xh.5156edu.com/html3/4859.html) | |

Wu

**阴平阳平上声去声**

**曲调melody: l3 3| 3 5| 214| 5 1l**

**样品字sample character:** [污6](http://xh.5156edu.com/html3/8246.html) [无4](http://xh.5156edu.com/html3/1679.html)[五4](http://xh.5156edu.com/html3/2116.html) [物8](http://xh.5156edu.com/html3/12449.html)

**号表法no.indicator:** 1 2 3 4

**全家福family photo:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | **纲（四声）** | **目（汉字梳理）** | | Wu 1 | [兀3](http://xh.5156edu.com/html3/2087.html)  [乌4](http://xh.5156edu.com/html3/1644.html)[邬6](http://xh.5156edu.com/html3/2195.html)  [弙6](http://xh.5156edu.com/html3/5034.html)[汙6](http://xh.5156edu.com/html3/8249.html)[窏11](http://xh.5156edu.com/html3/15953.html)  [污6](http://xh.5156edu.com/html3/8246.html)[汚6](http://xh.5156edu.com/html3/8250.html)[圬6](http://xh.5156edu.com/html3/9434.html)[杇7](http://xh.5156edu.com/html3/11452.html)[洿9](http://xh.5156edu.com/html3/8443.html)  [呜7](http://xh.5156edu.com/html3/5443.html)[钨9](http://xh.5156edu.com/html3/14528.html)[烏10](http://xh.5156edu.com/html3/10597.html)[鄔12](http://xh.5156edu.com/html3/2411.html)[嗚13](http://xh.5156edu.com/html3/5873.html)[歍14](http://xh.5156edu.com/html3/12685.html)[螐16](http://xh.5156edu.com/html3/16594.html)[鴮17](http://xh.5156edu.com/html3/21658.html)[鎢18](http://xh.5156edu.com/html3/20063.html)[鰞21](http://xh.5156edu.com/html3/22092.html)  [巫7](http://xh.5156edu.com/html3/5019.html)[诬9](http://xh.5156edu.com/html3/3509.html)[恶10](http://xh.5156edu.com/html3/13662.html)[誣14](http://xh.5156edu.com/html3/18807.html)  [於8](http://xh.5156edu.com/html3/10761.html)  [屋9](http://xh.5156edu.com/html3/7419.html)[剭11](http://xh.5156edu.com/html3/2050.html)[箼15](http://xh.5156edu.com/html3/17946.html) [誈13](http://xh.5156edu.com/html3/18799.html) | | Wu 2 | [亡3](http://xh.5156edu.com/html3/3398.html)  [无4](http://xh.5156edu.com/html3/1679.html)[芜7](http://xh.5156edu.com/html3/3677.html)[無12](http://xh.5156edu.com/html3/10608.html)[蕪15](http://xh.5156edu.com/html3/4346.html)[墲15](http://xh.5156edu.com/html3/9825.html)[璑16](http://xh.5156edu.com/html3/13545.html)[蟱18](http://xh.5156edu.com/html3/16649.html)[譕19](http://xh.5156edu.com/html3/19003.html)[鷡23](http://xh.5156edu.com/html3/21831.html) [橆16](http://xh.5156edu.com/html3/12258.html)  [毋4](http://xh.5156edu.com/html3/13621.html)  [吾7](http://xh.5156edu.com/html3/5444.html)[郚9](http://xh.5156edu.com/html3/2297.html)[唔10](http://xh.5156edu.com/html3/5636.html)[娪10](http://xh.5156edu.com/html3/6529.html)[峿10](http://xh.5156edu.com/html3/7162.html)[浯10](http://xh.5156edu.com/html3/8521.html)[洖10](http://xh.5156edu.com/html3/8567.html)[梧11](http://xh.5156edu.com/html3/11763.html)[珸11](http://xh.5156edu.com/html3/13408.html)[铻12](http://xh.5156edu.com/html3/14628.html)  [鋙15](http://xh.5156edu.com/html3/19853.html)[鯃18](http://xh.5156edu.com/html3/21992.html)[鼯20](http://xh.5156edu.com/html3/22260.html)  [吴7](http://xh.5156edu.com/html3/5445.html)[吳7](http://xh.5156edu.com/html3/5456.html)[呉7](http://xh.5156edu.com/html3/5474.html)[茣10](http://xh.5156edu.com/html3/3932.html)[祦11](http://xh.5156edu.com/html3/13056.html)[蜈13](http://xh.5156edu.com/html3/16423.html)  [莁10](http://xh.5156edu.com/html3/3933.html)[鹀12](http://xh.5156edu.com/html3/15346.html)[鵐18](http://xh.5156edu.com/html3/21666.html) | | Wu 3 | [2](http://xh.5156edu.com/html3/22471.html)  [五4](http://xh.5156edu.com/html3/2116.html)[伍6](http://xh.5156edu.com/html3/2793.html)  [午4](http://xh.5156edu.com/html3/3355.html)[仵6](http://xh.5156edu.com/html3/2794.html)[迕7](http://xh.5156edu.com/html3/4712.html)[忤7](http://xh.5156edu.com/html3/10027.html)[玝8](http://xh.5156edu.com/html3/13316.html)  [妩7](http://xh.5156edu.com/html3/6376.html)[庑7](http://xh.5156edu.com/html3/5112.html)[怃7](http://xh.5156edu.com/html3/10026.html)  [武8](http://xh.5156edu.com/html3/14210.html)[倵10](http://xh.5156edu.com/html3/3086.html)[陚10](http://xh.5156edu.com/html3/2349.html)[娬11](http://xh.5156edu.com/html3/6561.html)[珷12](http://xh.5156edu.com/html3/13429.html)[鹉13](http://xh.5156edu.com/html3/15358.html)[碔13](http://xh.5156edu.com/html3/15569.html)[鵡19](http://xh.5156edu.com/html3/21695.html)  [侮9](http://xh.5156edu.com/html3/2978.html)[娒10](http://xh.5156edu.com/html3/6523.html)  [逜10](http://xh.5156edu.com/html3/4796.html)[捂10](http://xh.5156edu.com/html3/7762.html)[牾11](http://xh.5156edu.com/html3/12468.html)[啎11](http://xh.5156edu.com/html3/5757.html)  [摀13](http://xh.5156edu.com/html3/7990.html)[熓14](http://xh.5156edu.com/html3/11154.html)[瑦14](http://xh.5156edu.com/html3/13506.html)  [舞14](http://xh.5156edu.com/html3/9972.html)[躌21](http://xh.5156edu.com/html3/19533.html)  [憮15](http://xh.5156edu.com/html3/10331.html)[潕15](http://xh.5156edu.com/html3/9015.html)[廡15](http://xh.5156edu.com/html3/5198.html)[嫵15](http://xh.5156edu.com/html3/6736.html)[儛16](http://xh.5156edu.com/html3/3301.html)[甒16](http://xh.5156edu.com/html3/13271.html)[瞴17](http://xh.5156edu.com/html3/15040.html) | | Wu 4 | [兀3](http://xh.5156edu.com/html3/2087.html)[兀3](http://xh.5156edu.com/html3/22468.html)[阢5](http://xh.5156edu.com/html3/2175.html)[扤6](http://xh.5156edu.com/html3/7546.html)[屼6](http://xh.5156edu.com/html3/7027.html)[杌7](http://xh.5156edu.com/html3/11446.html)[矹8](http://xh.5156edu.com/html3/15433.html)[卼9](http://xh.5156edu.com/html3/10759.html)[靰12](http://xh.5156edu.com/html3/20824.html)  [乌4](http://xh.5156edu.com/html3/1644.html)[坞7](http://xh.5156edu.com/html3/9463.html)[隖12](http://xh.5156edu.com/html3/2409.html)[嵨13](http://xh.5156edu.com/html3/7277.html)[溩13](http://xh.5156edu.com/html3/8889.html)[塢13](http://xh.5156edu.com/html3/9739.html)  [勿4](http://xh.5156edu.com/html3/1783.html)[岉7](http://xh.5156edu.com/html3/7058.html)[芴7](http://xh.5156edu.com/html3/3660.html)[物8](http://xh.5156edu.com/html3/12449.html)[粅10](http://xh.5156edu.com/html3/16962.html)  [务5](http://xh.5156edu.com/html3/2575.html)[務10](http://xh.5156edu.com/html3/2621.html)[奦13](http://xh.5156edu.com/html3/4991.html)[熃14](http://xh.5156edu.com/html3/11153.html)[霧18](http://xh.5156edu.com/html3/20690.html)  [雾13](http://xh.5156edu.com/html3/20645.html)[雺13](http://xh.5156edu.com/html3/20651.html)  [戊5](http://xh.5156edu.com/html3/10819.html)  [忢8](http://xh.5156edu.com/html3/13644.html)  [旿8](http://xh.5156edu.com/html3/12776.html)  [敄9](http://xh.5156edu.com/html3/12560.html)[婺12](http://xh.5156edu.com/html3/6616.html)[骛12](http://xh.5156edu.com/html3/6155.html)[嵍12](http://xh.5156edu.com/html3/7237.html)[霚17](http://xh.5156edu.com/html3/20686.html)[鹜14](http://xh.5156edu.com/html3/15367.html)[騖19](http://xh.5156edu.com/html3/21401.html)[鶩20](http://xh.5156edu.com/html3/21746.html)  [俉9](http://xh.5156edu.com/html3/3005.html)[悟10](http://xh.5156edu.com/html3/10146.html)[晤11](http://xh.5156edu.com/html3/12848.html)[焐11](http://xh.5156edu.com/html3/11020.html)[痦12](http://xh.5156edu.com/html3/15159.html)[寤14](http://xh.5156edu.com/html3/6319.html)[窹16](http://xh.5156edu.com/html3/15994.html)  [误9](http://xh.5156edu.com/html3/3510.html)[悮10](http://xh.5156edu.com/html3/10147.html)[悞10](http://xh.5156edu.com/html3/10162.html)[誤14](http://xh.5156edu.com/html3/18810.html)  [恶10](http://xh.5156edu.com/html3/13662.html)  [鋈15](http://xh.5156edu.com/html3/19589.html)  [鼿17](http://xh.5156edu.com/html3/22276.html)[齀18](http://xh.5156edu.com/html3/22277.html)  [蘁19](http://xh.5156edu.com/html3/4521.html) | | ? | [厼5](http://xh.5156edu.com/html3/3383.html)[朰5](http://xh.5156edu.com/html3/11409.html)[鯲19](http://xh.5156edu.com/html3/22030.html) | |

**Chinese-western knowledge fusion:**

**汉-英(对应)**

**Wa**

**阴平阳平上声去声**

**曲调melody: l3 3| 3 5| 214| 5 1l**

**样品字sample character:** [挖9](http://xh.5156edu.com/html3/7703.html)[娃9](http://xh.5156edu.com/html3/6458.html) [瓦4](http://xh.5156edu.com/html3/13227.html) [袜10](http://xh.5156edu.com/html3/16045.html)

**号表法no.indicator:** 1 2 3 4

**知识对应knowledge counterpart:**

Wa 1

挖to dig

挖出exhumation

挖掘to mine, to tap, to make digs

spadework挖掘工作，费力气的基础工作

挖掘创造性to tap into creativity

挖掘壕沟to entrench

挖掘机excavator

挖掘潜力to tap the potential

挖空to hollow out

to hollow out from within从内部挖空

挖苦的话snide comment

挖苦地caustically，wryly, tongue-in-cheek

挖泥船dredge

蛙frog

goliath frog非洲巨蛙

Wa 2

娃kid, child

娃娃鱼giant salamander

Wa 3

瓦tile

瓦匠bricklayer, tiler

瓦解to demoralize，to unravel

to unravel from within从内部瓦解

瓦特watt

watt/hour 一度电

watts per square meter W/m2 （气象用语）

microwatts per square meter mW/m2 （气象用语）

Wa 4

袜子sock

stockings长袜子

chaussettes短统袜子

**Wai**

**阴平阳平上声去声**

**曲调melody: l3 3| 3 5| 214| 5 1l**

**样品字sample character:** [歪9](http://xh.5156edu.com/html3/14214.html) [崴12](http://xh.5156edu.com/html3/7218.html) [外5](http://xh.5156edu.com/html3/9955.html)

**号表法no.indicator:** 1 2 3 4

**知识对应knowledge counterpart:**

Wai 1

歪词wry phrase

歪曲travesty, to twist things，to wrest

歪曲事实to distort the facts

Wai 3

崴了脚脖子wrung ankle

Wai 4

外包，外购to outsource

outsourcing tracking外包跟踪

外表veneer, visage

外病原体exopathogen

外部干涉external intervention

外出搜集情报的工作legwork

外分泌系统examples of exocrine glands:

(Which produce and secrete substance

into epithelial surface by way of a duct)

Sweat gland汗腺

Salivary gland唾液腺

Mammary gland乳腺

Ceruminous gland耳垢腺

Lacrimal gland泪腺

Sebaceous gland脂肪腺

Mucous gland黏液腺

外行outsider

outsider artist外行艺术家

外汇操纵国currency manipulator

to jawbone the US dollar higher or lower

使美元走高或走低

Dollar sags美元跌势

Dollar rallies美元涨势

外汇制度foreign exchange regime

外观facade

外国直接投资FDI---foriegn direct investment

外汇FX = forex = foreign exchange外汇兑换 外汇交易市场

外交diplomacy

diplomatic note外交照会

brinkmanship外交冒险政策

diplomatic corps外交使节团

外交失误diplomatic faux pas

外科手术式的打击surgical strike

外壳(to separate grain from) husk

外快(额外待遇) perk

外来的影响extraneous effects

alien shock外来的冲击

外卖takeout

(跑)外勤to do actual legwork

外生的exogenous vs endogenous内生的

外甥nephew侄儿

外甥女niece侄女

外套mantra

外天发射公司(德国) Exolaunch 业务范围：

NewSpace、SmallSats、CubeSats、Microsats、Launch、CubeSat Deployers、Separation Systems、CarboNIX、Rideshare、Sequencers和Mission Management

外围部分penumbra, peripheral zone

外消旋化合物racemic compound

外显子exon vs intron内含子

外向extroversion vs introversion内向

Extrovert vs introvert外向人，内向人

外星人alien

外星超级结构alien megastructure

外星体extra terrestrial body

外星行星exoplanet

外遇extramarital affair

**Wan**

**阴平阳平上声去声**

**曲调melody: l3 3| 3 5| 214| 5 1l**

**样品字sample character:** [弯9](http://xh.5156edu.com/html3/5051.html) [丸3](http://xh.5156edu.com/html3/1642.html)[碗13](http://xh.5156edu.com/html3/15568.html) [万3](http://xh.5156edu.com/html3/1672.html)

**号表法no.indicator:** 1 2 3 4

**知识对应knowledge counterpart:**

Wan 1

弯路tortuous road

弯弯曲曲的winding, squiggly

弯曲双腿to bend one’s legs

弯身穿过晒衣线to dock through washing lines

弯腰憔悴to become stooped and haggard

蜿蜒的meandering

蜿蜒的路sinuous road

蜿蜒曲折zigs or zags

蜿蜒通向to meander toward...

剜补术 gouge out filling operation凿出灌装操作

Wan 2

丸子ball, a round mass of food or medicine

顽强的，盲从的bigoted, stubborn, bullheaded

diehard fans顽固的粉丝

顽固的人obstinate or mullish man

顽固不化的unrepentant不后悔的

顽皮的impish, naughty

顽强不屈to hang tough

顽强的侦破工作dogged detective work

顽强的战士tenacious fighter

顽抗者recalcitrant

顽童urchin海胆，刺猬

顽症a perennial problem

完成to complete, to finish

(下决心)完成to plow through

完成百年目标to achieve the centenial goals

完成工作to get stuff done

完成交易to close the deal

完成这一壮举to complete the feat

圆满完成to wrap up one’s opening arguments

完蛋to go to hell

完工在即to near completion

完好无损fully intact

完美perfect, flawless

完美的骗子consummate con man

完美的照片picture perfect

完美的独裁统治perfect dictatorship

完全downright, outright

to sit through看完，听完

完全错误plain wrong

完全妨碍to stymy

完全垄断农药残留full monopoly of pesticide residues

完全落在...头上blame rests squarely with sb

完全拟合(最合适) perfect fit

完全捏造的totally fabricated

完全透明的crystal clear

完全形态gestalt

完全征服to take sb by storm

玩to hang out

to play dirty tricks玩卑鄙手段

玩飞盘to play frisbee

玩火，轻举妄动to play with fire

玩狮子尾巴to play with the lion’s tail

玩杂耍 to juggle 玩弄

玩高尔夫球golf game

玩家gamer

玩命tempting fate

玩弄to twiddle，to toy with

玩弄女性的philandering

玩耍romp

玩“我的世界”to play Minecraft

玩游戏to play (risky political) game

玩种族牌to play the race card

玩自恋式的责备游戏to play narcissistic blame game

烷(饱和之意)alkyl, alkane, camphane, menthane

甲烷methane

乙烷ethane

丙烷propane

丁烷 butane

戊烷 pentane

己烷 hexane

庚烷 heptane

辛烷 octane

壬烷 nonane

癸烷 decane

‘十一’之后用中文小写数字 (一，二，三...)

烷烃alkane, paraffin, hydrocarbon alkyl

Alkane nomenclature烷烃命名:

allotrope同素异形体

homolog同系物

isomerism同分异构体

isotope同位素

Wan 3

惋惜to bemoan

婉转的问题soft question vs soft answer婉转地回答

挽回部分损失to undo some of the damage

挽救局面to save the day

挽起袖子to pull up one’s sleeves

Wan 4

万10,000

万分小心out of an abundance of caution

万古，千万年，极长时间 eon

万花筒kaleidoscope

万灵丹cure-all, panacea, nostrum

万能的上帝 almighty god

万能牌wild card

万能药elixir, panacea

万全之策one-size-fits-all (一刀切)

万圣节装饰Halloween decoration

万事如意to succeed in everything one wishes

万寿花marigold

万维联盟学派W3C school = worldwideweb consortium school

HTML/CSS--- hypertext markup language/cascading style sheets

超级文本标记语言/层叠样式表

Browser side浏览器端

Server side服务器端

Programming程序

XML--- extensive markup language可扩展的标记语言

Web building网络建设

Reference 参考

文档类型定义DTD--- document type definition:

elements元素

attribute属性

entities实体

comments注释

无线电应用协议WAP--- wireless application protocol:

1. Wireless application environment
2. Wireless session layer
3. Wireless transaction layer
4. Wireless transport layer security
5. Wireless datagram protocol

WAP支持的手持设备：参见“网络协议”

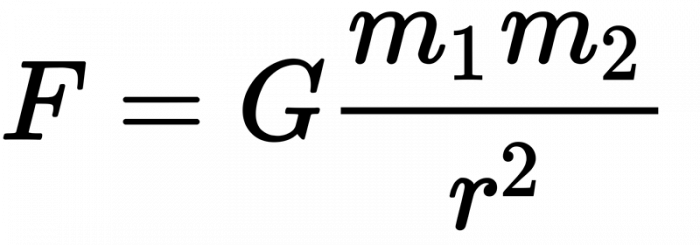
万无一失fool-proof (way)

万向推进器omnidirectional propeller

万一in case, in the event of

万一战争爆发in case war breaks out

万有引力定律law of gravity



万众瞩目to take center stage

万字饰 (Nazi) swastika

腕道管综合症carpal tunnel syndrome

**Wang**

**阴平阳平上声去声**

**曲调melody: l3 3| 3 5| 214| 5 1l**

**样品字sample character:** [汪7](http://xh.5156edu.com/html3/8293.html) [王4](http://xh.5156edu.com/html3/13280.html)[网6](http://xh.5156edu.com/html3/2558.html) [望11](http://xh.5156edu.com/html3/13996.html)

**号表法no.indicator:** 1 2 3 4

**知识对应knowledge counterpart:**

Wang 1

汪洋大海boundless seas

Wang 2

王朝的君主dynasty monarchy

王婆卖瓜，自卖自夸Every potter praises his own pot.

王权throne

王子prince

princeling小王子

亡羊补牢to shut (close, lock) the stable after the horse has bolted

Wang 3

网篦to trawl through

网捕enmeshment

网格单元grid cell

网cyber-, network

cyber-security网络安全

Cyberattack

Cyberbattlefield

Cybercompaign

Cyberdefense

Cyberhacker

Cybernetics immune system

Cyberincident

Cyberleak

Cyberplatform

Cyberrisk

Cybersabotage

Cybersex

Cyberspy

Cybertheft

Cyberthreat

Cyberspace

Cybersoveriegnty

Cyberweapon

Cyborg电子人

网络爆红internet meme

网络电话skype, to skype用网络电话联系

网络电话回复to skype call-back

网络公司泡沫dot.com bubble (burst in 2001)

网络间谍平台 cyber-espionage platform

网络欺诈phishing

anti-phishing guidance反网络欺诈指南

to tackle phishing对付网络欺诈

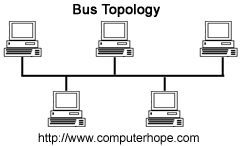
to run simulated phishing campaigns进行模拟网络欺诈活动

网络摄影webcamming网络视频

网络身份online identity

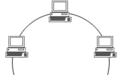
网络拓扑network topology--- which refers to the way that your computer network is arranged. The network can have a physical or a logical topology. The physical topology describes the layout of computers and where the workstations ar positioned. The logical network topology describes the information flows through the network. The most common topologies are

Bus总线拓扑

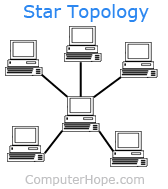


Ring环形拓扑

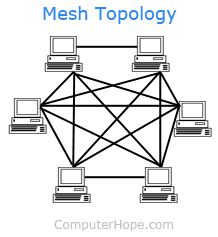
Ring topology

[](https://www.baidu.com/link?url=pWcAIr8cM8Kbh2ySve25FiyhDG6uiV1A1iio64QviHeyG4aqIc5VrDWJzauxzgxFWMhqsSWIwBeCgArKiKIJzK%26wd=%26eqid=e8db54be000035b8000000065ea93d7b)

Star星形拓扑



Mesh网形拓扑



网络协议TCP/IP

[IMG_256](https://www.cnblogs.com/heitaoq/)

# **OSI七层模型 open system interconnection created by ISO国际标准化组织和CCITT国际电话咨询委员会联合制定的**

## **应用层 application layer**

#### **HTTP 超文本传输协议**

#### **FTP 文件传输协议**

#### **SMTP 简单邮件传输协议**

#### **TELNET TCP/IP终端仿真协议**

#### **POP3 邮局协议第三版**

#### **Finger 用户信息协议**

#### **NNTP 网络新闻传输协议**

#### **IMAP4 因特网信息访问协议第四版**

#### **LPR UNIX 远程打印协议**

#### **Rwho UNIX 远程 Who协议**

#### **Rexec UNIX远程执行协议**

#### **Login UNIX 远程登陆协议**

#### **RSH UNIX 远程Shell协议**

#### **NTF HP网络文件传输协议**

#### **RDA HP 远程数据库访问协议**

#### **VT 虚拟终端仿真协议**

#### **RFA HP 远程文件访问协议**

#### **RPC Remote Process Comm.**

#### **S-HTTP 安全超文本传输协议**

#### **GDP网关发现协议**

#### **X-Window**

#### **CMOT 基于TCP/IP的CMIP协议**

#### **SOCKS 安全套接字协议**

#### **FANP流属性通知协议**

#### **SLP服务定位协议**

#### **MSN微软网络服务**

#### **Radius 远程用户拨号认证服务协议**

#### **DNS 域名系统**

#### **NFS网络文件系统协议**

#### **NIS SUN 网络信息系统协议**

#### **R-STAT SUN远程状态协议**

#### **NSM SUN 网络状态监测协议**

#### **PMAP SUN 端口映射协议**

#### **Mount**

#### **LPR UNIX远程打印协议**

#### **常用UDP协议的应用层服务**

BOOTP引导协议 bootstrap protocol  
DHCP动态主机配套协议 dynamic host configuration protocol  
NTP网络时间协议 network time protocol  
TFTP简单文件传输协议 trivial file transfer protocol

#### **SNMP简单网络管理协议**

## **表示层 presentation layer**

#### **DECnet NSP**

#### **LPP 轻量级表示协议**

#### **NBSSN NetBIOS会话服务协议**

#### **XDP外部数据表示协议**

#### **IPX**

## **会话层 session layer**

#### **SSL 安全套接字层协议**

#### **TLS传输层安全协议**

#### **DAP目录访问协议**

#### **LDAP轻量级目录访问协议**

#### **RPC远程过程调用协议**

#### **VINES NETRPC**

VFRP  
NeTBIOS  
IPX

## **传输层 transportation layer**

#### **XOT 基于tcp之上的X协议**

#### **Van Jacobson 压缩TCP协议**

#### **ISO-DE ISO 开发环境-------->NetBISO**

#### **TALI 传输适配层接口协议**

#### **DSI、NetBIOS、IP NeTBIOS、ISO-TP SSP、SMB、MSRPC**

### **UDP用户数据报协议**

#### **RUDP可靠的用户数据报协议**

#### **Mobile IP 移动IP协议**

## **网络层 network layer**

#### **IP/IPv6 互联网协议/互联网协议第六版**

#### **ICMPv6互联网控制信息协议第六版**

#### **ICMP互联网控制信息协议**

#### **IGMP 互联网组管理协议**

#### **SLIP 串行线路IP协议**

### **安全协议**

#### **AH 认证头协议**

#### **ESP 安装封装有效载荷协议**

### **路由协议**

#### **EGP 外部网关协议**

#### **OSPF 开放最短路径优先协议**

#### **IGRP 内部网关路由协议**

#### **NHRP 下一跳解析协议**

#### **IE-IRGP 增强内部网关路由选择协议**

#### **RIPng for IPv6 IPv6路由信息协议**

#### **GGP 网关到网关协议**

#### **VRRP 虚拟路由器冗余协议**

#### **PGM 实际通用组播协议**

#### **RSVP 资源预留协议**

#### **PIM-DM 密集模式独立组播协议**

#### **DVMRP 距离矢量组播路由协议**

#### **RIP2 路由信息协议第二版**

#### **PIM-SM 稀疏模式独立组播协议**

#### **MOSPF 组播开放最短路径优先协议**

## **数据链路层 datalink layer**

#### **MPLS 多协议标签交换协议**

#### **XTP 压缩传输协议**

#### **DCAP 数据转换客户访问协议**

#### **SLE 串行连接封装协议**

#### **IPinIP IP套IP封装协议**

### **隧道协议**

#### **PPTP点对点隧道协议**

#### **L2F第二层转发协议**

#### **L2TP 第二层隧道协议**

#### **ATMP接入隧道管理协议**

### **Cisco 协议**

#### **CDP 思科发现协议**

#### **CGMP 思科组管理协议**

### **地址解析协议**

#### **ARP地址解析协议**

#### **RAR逆向地址解析协议**

## **物理层 physical layer**

#### **IEEE 802.2**

#### **Ethernet v.2**

#### **Internetwork**

网络研讨会webinar

网络治理权network governance right

网络主权cyber sovereignty

网络杂志webzine

网民netizen

网上贸易etrade, online trading

网上搜索to search the internet

网上销售online sales

网上约会online dating

网瘾cyber addiction, internet addiction

网友cyber pal

网战cyberwarfare vs kinetic warfare

枉费心机to teach the old new tricks

往楼顶跑to go to the top of tall building

往返旅行round trip

往上爬to claw one’s way

Wang 4

望尘莫及too far behind to catch up with

望远镜telescope:

radio telescope射电望远镜

Ground-based telescope地基望远镜

[](https://baike.baidu.com/pic/500ç±³å£å¾çé¢å°çµæè¿é/2504551/0/f9dcd100baa1cd114c453b67b212c8fcc2ce2d81?fr=lemma%26ct=single)

FAST---five-hundred-meter aperture special radio telescope中国的“天眼”望远镜

Space-based telescope太空望远镜

Hubble哈勃：

Eagle nebula老鹰星云,pillars of creation创生之柱

Horsehead nebula in Orion constellation

猎户座的马头星云

Spitzer telescope斯皮策

忘掉to slip one’s mind

忘记to forget

忘形ecstasy

妄想的delusional

旺flourishing, prosperous, vigorous

旺市bull market

**Wei**

**阴平阳平上声去声**

**曲调melody: l3 3| 3 5| 214| 5 1l**

**样品字sample character:** [威9](http://xh.5156edu.com/html3/6459.html)[韦4](http://xh.5156edu.com/html3/13597.html) [伟6](http://xh.5156edu.com/html3/2791.html) [位7](http://xh.5156edu.com/html3/2854.html)

**号表法no.indicator:** 1 2 3 4

**知识对应knowledge counterpart:**

Wei 1

威力power, might, prowess

威权主义authorianism:

Consultative authorianism咨询性威权主义

Elite authorianism精英威权主义

Soft authorianism柔性威权主义

威慑deterrence, to scare, to overawe吓住

robust deterrence强大的威慑

direct deterrence --- deterring an attack on one’s own country

extended deterrence --- deterring an attack on a third country

威慑侵略to deter aggression

威望cachet

威胁menace, threat, to intimidate, to threaten

gravest threat最大的威胁

to threaten one’s neighbors 威胁邻居

threat actor威胁源起方

threat level scale威胁等级

advanced persistent threat高级持续性威胁

威胁等级threat level:

Imminence(critical)危急(最高等级)

威胁种类types of threats:

Subsonic亚音速的

Supersonic超音速的

Sea-skimming超低空的

Land-hugging贴地面的

(在枪口的)威胁下at gunpoint

威严majesty

危害免疫系统to compromise the immune system

危及to imperil

危险danger, hazard

hazard class危险类别

danger zone危险区

to raise a red flag危险信号

menace危险人物

危言耸听scare-mongering

微暴力microaggression

微博weibo of Sina新浪

微博twitter (friendstalker友谊聊天室) (= weibo) which introduces 140-character microblog called tweet推特

微不足道 (it initially sounds) meagre(咋一听起来)

微不足道的成就palt方程d/--E--++ry achievement

微不足道的东西tuppence两便士

微处理器microprocessor

微观，宏观micro- vs macro-

microparticle微观粒子，微粒

微乎其微miniscue

微积分calculus

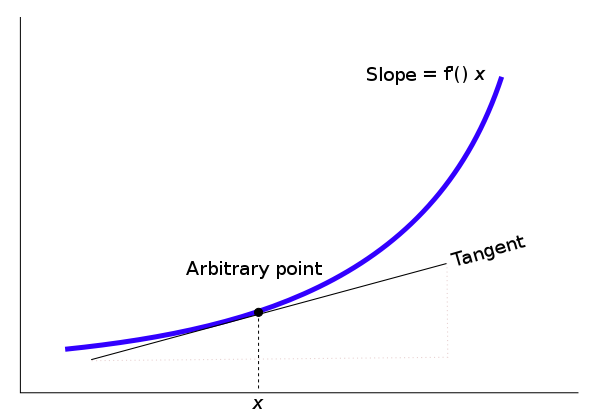
微积分（Calculus），数学概念，是[高等数学](https://baike.baidu.com/item/%E9%AB%98%E7%AD%89%E6%95%B0%E5%AD%A6/1182" \t "https://baike.baidu.com/item/%E5%BE%AE%E7%A7%AF%E5%88%86/_blank)中研究函数(function)的[微分](https://baike.baidu.com/item/%E5%BE%AE%E5%88%86/317988" \t "https://baike.baidu.com/item/%E5%BE%AE%E7%A7%AF%E5%88%86/_blank)(Differentiation)、[积分](https://baike.baidu.com/item/%E7%A7%AF%E5%88%86/5749068" \t "https://baike.baidu.com/item/%E5%BE%AE%E7%A7%AF%E5%88%86/_blank)(Integration)以及有关概念和应用的数学分支。它是数学的一个基础学科，内容主要包括[极限](https://baike.baidu.com/item/%E6%9E%81%E9%99%90/3564509" \t "https://baike.baidu.com/item/%E5%BE%AE%E7%A7%AF%E5%88%86/_blank)(limit)、微分学、积分学及其应用。微分学包括求导数(derivative)的运算，是一套关于变化率的理论。它使得[函数](https://baike.baidu.com/item/%E5%87%BD%E6%95%B0/301912" \t "https://baike.baidu.com/item/%E5%BE%AE%E7%A7%AF%E5%88%86/_blank)、速度 (velocity)、加速度(acceleration)和曲线(curvatuve)的斜率(slope)等均可用一套通用的符号进行讨论。积分学，包括求积分的运算，为定义和计算[面积](https://baike.baidu.com/item/%E9%9D%A2%E7%A7%AF/100551" \t "https://baike.baidu.com/item/%E5%BE%AE%E7%A7%AF%E5%88%86/_blank)、体积等提供一套通用的方法。

尽管，微积分是一个由符号和逻辑构成的想象领域，大自然是一个由力和现象构成的现实领域，但是，微积分可以模拟大自然。

微积分就是想让复杂的难题简单化。它可被分为切分和重组两个步骤：切分是无限精细的减法运算，用于量化各部分之间的差异；重组涉及无限的加法运算，将各部分整合成原来的整体。

微积分解决了三个谜题：曲线是由微小的平直部件构成的；运动是由无数的匀速运动构成的；变化是由无穷的微小变化构成的。

极限是微积分的本质。微分研究函数的局限性，积分可以用来求不均衡几何体的质量。在二维平面图中，微分是将一个图形无限划分，积分是求这无限个划分的面积，所以，微积分是微分后再积分。

[](https://en.wikipedia.org/wiki/File:Tangent_derivative_calculusdia.svg)

Tangent line at (*x*, *f*(*x*)). The derivative *f′*(*x*) of a curve at a point is the slope (rise over run) of the line tangent to that curve at that point.

Differential calculus is the study of the definition, properties, and applications of the [derivative](https://en.wikipedia.org/wiki/Derivative" \o "Derivative) of a function. The process of finding the derivative is called *differentiation*. Given a function and a point in the domain, the derivative at that point is a way of encoding the small-scale behavior of the function near that point. By finding the derivative of a function at every point in its domain, it is possible to produce a new function, called the *derivative function*

# Glossary of calculus微积分词汇

This **glossary of calculus** is a list of definitions about **[calculus](https://en.wikipedia.org/wiki/Calculus" \o "Calculus)**, its sub-disciplines, and related fields.

**Contents:**

* **[Abel's test](https://en.wikipedia.org/wiki/Abel's_test" \o "Abel's test)** –阿贝尔判别法
* **[Absolute convergence](https://en.wikipedia.org/wiki/Absolute_convergence" \o "Absolute convergence)** –绝对收敛（性）
* **[Absolute maximum](https://en.wikipedia.org/wiki/Maxima_and_minima" \o "Maxima and minima)** –最大绝对值
* Applied calculus-应用微积分
* **[Absolute minimum](https://en.wikipedia.org/wiki/Maxima_and_minima" \o "Maxima and minima)** –最小绝对值
* **[Alternating series](https://en.wikipedia.org/wiki/Alternating_series" \o "Alternating series)** –交错级数定理，交错序列
* **[Alternating series test](https://en.wikipedia.org/wiki/Alternating_series_test" \o "Alternating series test)** –交错级数判别法
* **[Annulus](https://en.wikipedia.org/wiki/Annulus_(mathematics)" \o "Annulus (mathematics))** –圆环域，环面
* **[Antiderivative](https://en.wikipedia.org/wiki/Antiderivative" \o "Antiderivative)** –反导数，不定积分
* **[Area under a curve](https://en.wikipedia.org/wiki/Area_under_a_curve" \o "Area under a curve)** –（一条）曲线图面积
* **[Asymptote](https://en.wikipedia.org/wiki/Asymptote" \o "Asymptote)** –渐近线
* **[Average rate of change](https://en.wikipedia.org/wiki/Rate_(mathematics)" \l "rate_of_change" \o "Rate (mathematics))** –平均变化率
* **[Bounded function](https://en.wikipedia.org/wiki/Bounded_function" \o "Bounded function)** –有界函数
* **[Bounded sequence](https://en.wikipedia.org/wiki/Bounded_function" \l "bounded_sequence" \o "Bounded function)** –有界序列
* **[Calculus](https://en.wikipedia.org/wiki/Calculus" \o "Calculus)** –微积分（学）
* **[Cavalieri's principle](https://en.wikipedia.org/wiki/Cavalieri's_principle" \o "Cavalieri's principle)** –卡瓦列里的原则（= method of indivisibles）
* **[Chain rule](https://en.wikipedia.org/wiki/Chain_rule" \o "Chain rule)** –链式法则
* **[Change of variables](https://en.wikipedia.org/wiki/Change_of_variables" \o "Change of variables)** –变量替换（= transformation）
* **[Concave function](https://en.wikipedia.org/wiki/Concave_function" \o "Concave function)** –凹函数vs convex function凸函数
* **[Continuous function](https://en.wikipedia.org/wiki/Continuous_function" \o "Continuous function)** –连续函数
* **[Continuously differentiable](https://en.wikipedia.org/wiki/Differentiable_function" \l "Differentiability_classes" \o "Differentiable function)-连续可微的**
* **[Contour integration](https://en.wikipedia.org/wiki/Methods_of_contour_integration" \o "Methods of contour integration)** –围道积分
* **[Convergent series](https://en.wikipedia.org/wiki/Convergent_series" \o "Convergent series)** –收敛级数
* **[Critical point](https://en.wikipedia.org/wiki/Critical_point_(mathematics)" \o "Critical point (mathematics))** –临界点
* **[Curve](https://en.wikipedia.org/wiki/Curve" \o "Curve)** –曲线
* **[Curve sketching](https://en.wikipedia.org/wiki/Curve_sketching" \o "Curve sketching)** –曲线描绘
* **[Derivative](https://en.wikipedia.org/wiki/Derivative" \o "Derivative)** –导数
* **[Derivative test](https://en.wikipedia.org/wiki/Derivative_test" \o "Derivative test)** –导数判别法
* **[Dirichlet's test](https://en.wikipedia.org/wiki/Dirichlet's_test" \o "Dirichlet's test)** –狄利克雷判别法
* **[Differentiable function](https://en.wikipedia.org/wiki/Differentiable_function" \o "Differentiable function)** \_可微函数
* **[Differential](https://en.wikipedia.org/wiki/Differential_(mathematics)" \o "Differential (mathematics))** –可微的
* **[Differential (infinitesimal)](https://en.wikipedia.org/wiki/Differential_(infinitesimal)" \o "Differential (infinitesimal))** –可微的（无穷小）
* **[Differential of a function](https://en.wikipedia.org/wiki/Differential_of_a_function" \o "Differential of a function)** –函数的微分
* **[Differentiation rules](https://en.wikipedia.org/wiki/Differentiation_rules" \o "Differentiation rules)** –导数列表
* **[Direct comparison test](https://en.wikipedia.org/wiki/Direct_comparison_test" \o "Direct comparison test)** –直接比较法
* **[Disc integration](https://en.wikipedia.org/wiki/Disc_integration" \o "Disc integration)** –盘积分
* **[Divergent series](https://en.wikipedia.org/wiki/Divergent_series" \o "Divergent series)** –发散级数
* **[Discontinuity](https://en.wikipedia.org/wiki/Discontinuity_(mathematics)" \o "Discontinuity (mathematics))** –不连续
* **[Dot product](https://en.wikipedia.org/wiki/Dot_product" \o "Dot product)** –点积，标量积
* **[Essential discontinuity](https://en.wikipedia.org/wiki/Classification_of_discontinuities" \l "Essential_discontinuity" \o "Classification of discontinuities)** –实质不连续性（=无穷不连续性）
* **[Extreme value theorem](https://en.wikipedia.org/wiki/Extreme_value_theorem" \o "Extreme value theorem)** –极值定理
* **[Extremum](https://en.wikipedia.org/wiki/Maxima_and_minima" \o "Maxima and minima)** –极端值
* **[Faà di Bruno's formula](https://en.wikipedia.org/wiki/Fa%C3%A0_di_Bruno's_formula" \o "Faà di Bruno's formula)** –布鲁诺公式（奇异恒等式）
* **[First derivative test](https://en.wikipedia.org/wiki/Derivative_test" \l "First_derivative_test" \o "Derivative test)** –一阶导数
* **[Fractional calculus](https://en.wikipedia.org/wiki/Fractional_calculus" \o "Fractional calculus)** –分数阶微积分
* **[Function](https://en.wikipedia.org/wiki/Function_(mathematics)" \o "Function (mathematics))** –函数
* **[Fundamental theorem of calculus](https://en.wikipedia.org/wiki/Fundamental_theorem_of_calculus" \o "Fundamental theorem of calculus)** –微积分基本定理
* **[General Leibniz rule](https://en.wikipedia.org/wiki/General_Leibniz_rule" \o "General Leibniz rule)** –广义？布莱尼茨规则
* **[Global maximum](https://en.wikipedia.org/wiki/Maxima_and_minima" \o "Maxima and minima)** –全局最大值
* **[Global minimum](https://en.wikipedia.org/wiki/Maxima_and_minima" \o "Maxima and minima)** –全局最小值
* **[Golden spiral](https://en.wikipedia.org/wiki/Golden_spiral" \o "Golden spiral)** –黄金螺旋线
* **[Harmonic progression](https://en.wikipedia.org/wiki/Harmonic_progression_(mathematics)" \o "Harmonic progression (mathematics))** –调和级数
* **[Higher derivative](https://en.wikipedia.org/wiki/Derivative" \l "Higher_derivatives" \o "Derivative)** –高阶导数
* **[Identity function](https://en.wikipedia.org/wiki/Identity_function" \o "Identity function)** –恒等函数
* **[Implicit function](https://en.wikipedia.org/wiki/Implicit_function" \o "Implicit function)** –隐函数
* **[Improper integral](https://en.wikipedia.org/wiki/Improper_integral" \o "Improper integral)** –广义积分，反常积分
* **[Inflection point](https://en.wikipedia.org/wiki/Inflection_point" \o "Inflection point)** –拐点，转折点
* **[Instantaneous rate of change](https://en.wikipedia.org/wiki/Derivative" \o "Derivative)** –瞬息改变率
* **[Instantaneous velocity](https://en.wikipedia.org/wiki/Velocity" \l "Instantaneous_velocity" \o "Velocity)** –瞬时速度
* **[Integral](https://en.wikipedia.org/wiki/Integral" \o "Integral)** –积分
* **[Integration by substitution](https://en.wikipedia.org/wiki/Integration_by_substitution" \o "Integration by substitution)** –换元积分法，代换积分法
* **[Intermediate value theorem](https://en.wikipedia.org/wiki/Intermediate_value_theorem" \o "Intermediate value theorem)** –截至定理
* **[Jump discontinuity](https://en.wikipedia.org/wiki/Classification_of_discontinuities" \l "Jump_discontinuity" \o "Classification of discontinuities)** –跳跃不连续性
* **[Lebesgue integration](https://en.wikipedia.org/wiki/Lebesgue_integration" \o "Lebesgue integration)** –勒贝格积分
* **[Limit comparison test](https://en.wikipedia.org/wiki/Limit_comparison_test" \o "Limit comparison test)** –审敛法
* **[Limit of a function](https://en.wikipedia.org/wiki/Limit_of_a_function" \o "Limit of a function)** –函数的极限
* **[Limits of integration](https://en.wikipedia.org/wiki/Limits_of_integration" \o "Limits of integration)** –积分限
* **[List of integrals](https://en.wikipedia.org/wiki/List_of_integrals" \o "List of integrals)** –积分列表
* **[Lower bound](https://en.wikipedia.org/wiki/Upper_and_lower_bounds" \l "Bounds_of_functions" \o "Upper and lower bounds)** –下界
* **[Mean value theorem](https://en.wikipedia.org/wiki/Mean_value_theorem" \o "Mean value theorem)** –均值定理
* **[Monotonic function](https://en.wikipedia.org/wiki/Monotonic_function" \l "Monotonicity_in_calculus_and_analysis" \o "Monotonic function)** –单调函数
* **[Multiple integral](https://en.wikipedia.org/wiki/Multiple_integral" \o "Multiple integral)** –多重积分
* **[Multivariable calculus](https://en.wikipedia.org/wiki/Multivariable_calculus" \o "Multivariable calculus)** –多变量微积分
* **[Notation for differentiation](https://en.wikipedia.org/wiki/Notation_for_differentiation" \o "Notation for differentiation)** –微分符号
* **[One-sided limit](https://en.wikipedia.org/wiki/One-sided_limit" \o "One-sided limit)** –单边极限
* **[Ordinary differential equation](https://en.wikipedia.org/wiki/Ordinary_differential_equation" \o "Ordinary differential equation)** –常微分方程
* **[Pappus's centroid theorem](https://en.wikipedia.org/wiki/Pappus's_centroid_theorem" \o "Pappus's centroid theorem)** –巴普斯质心定理
* **[Partial derivative](https://en.wikipedia.org/wiki/Partial_derivative" \o "Partial derivative)** –偏导数，偏微商
* **[Partial differential equation](https://en.wikipedia.org/wiki/Partial_differential_equation" \o "Partial differential equation)** –偏微分方程
* **[Piecewise](https://en.wikipedia.org/wiki/Piecewise" \o "Piecewise)** –分段的
* **[Power rule](https://en.wikipedia.org/wiki/Power_rule" \o "Power rule)** –幂规则
* **[Product rule](https://en.wikipedia.org/wiki/Product_rule" \o "Product rule)** –乘积法则
* **[Quotient rule](https://en.wikipedia.org/wiki/Quotient_rule" \o "Quotient rule)** –商法则
* **[Ratio test](https://en.wikipedia.org/wiki/Ratio_test" \o "Ratio test)** –比率检定
* **[Riemann integral](https://en.wikipedia.org/wiki/Riemann_integral" \o "Riemann integral)** –黎曼积分
* **[Related rates](https://en.wikipedia.org/wiki/Related_rates" \o "Related rates)** –相关规则
* **[Removable discontinuity](https://en.wikipedia.org/wiki/Classification_of_discontinuities" \l "Removable_discontinuity" \o "Classification of discontinuities)** –可移动不连续性
* **[Rolle's theorem](https://en.wikipedia.org/wiki/Rolle's_theorem" \o "Rolle's theorem)** –洛尔定理
* **[Root test](https://en.wikipedia.org/wiki/Root_test" \o "Root test)** –根检验法
* **[Second derivative](https://en.wikipedia.org/wiki/Second_derivative" \o "Second derivative)** –二阶导数
* **[Second derivative test](https://en.wikipedia.org/wiki/Second_derivative" \l "Second_derivative_test" \o "Second derivative)** –二阶导数试验法
* **[Second-order differential equation](https://en.wikipedia.org/wiki/Differential_equation" \l "Equation_order" \o "Differential equation)** –二阶微分方程
* **[Series](https://en.wikipedia.org/wiki/Series_(mathematics)" \o "Series (mathematics))** –级数
* **[Shell integration](https://en.wikipedia.org/wiki/Shell_integration" \o "Shell integration)** –壳积分（=shell method）vs washer method
* **[Simpson's rule](https://en.wikipedia.org/wiki/Simpson's_rule" \o "Simpson's rule)** –辛普森法则
* **[Squeeze theorem](https://en.wikipedia.org/wiki/Squeeze_theorem" \o "Squeeze theorem)** –夹挤定理
* **[Sum rule in differentiation](https://en.wikipedia.org/wiki/Sum_rule_in_differentiation" \o "Sum rule in differentiation)** –微分求和规则
* **[Summation](https://en.wikipedia.org/wiki/Summation" \o "Summation)** –和
* **[Table of integrals](https://en.wikipedia.org/wiki/List_of_integrals" \o "List of integrals)** –积分表
* **[Taylor's theorem](https://en.wikipedia.org/wiki/Taylor's_theorem" \o "Taylor's theorem)** –泰勒定理
* **[Third derivative](https://en.wikipedia.org/wiki/Third_derivative" \o "Third derivative)** –三阶导数
* **[Total differential](https://en.wikipedia.org/wiki/Total_differential" \o "Total differential)** –全积分
* **[Trigonometric substitution](https://en.wikipedia.org/wiki/Trigonometric_substitution" \o "Trigonometric substitution)** –三角代替法
* **[Upper bound](https://en.wikipedia.org/wiki/Upper_and_lower_bounds" \l "Bounds_of_functions" \o "Upper and lower bounds)** –上界
* **[Vector](https://en.wikipedia.org/wiki/Vector_(mathematics_and_physics)" \o "Vector (mathematics and physics))** –向量，矢量
* **[Vector calculus](https://en.wikipedia.org/wiki/Vector_calculus" \o "Vector calculus)** –向量微积分
* **[Washer](https://en.wikipedia.org/wiki/Disc_integration" \l "Washer_method" \o "Disc integration)** –垫圈
* **[Washer method](https://en.wikipedia.org/wiki/Disc_integration" \l "Washer_method" \o "Disc integration)** –垫圈法(=disc method) vs shell integration
* **[Zero vector](https://en.wikipedia.org/wiki/Zero_vector" \o "Zero vector)** –零向量

微流星体micrometeoroid

微妙的策略nuanced tactics:

Verbal pressure口头压力

Cajoling用甜言蜜语哄骗

Manipulation操弄

Tacit threats隐性威胁

微扰理论III perturbation theory: transition probability跃升几率,wave packet波包, degeneracy简并

微软 Microsoft

微弱的faint

(以)微弱优势通过to pass narrowly

微生物群系microbiome: bioinformatics

microbe’s host:微生物寄主：

Animals--- vertebrates, invertebrates

Plants--- multicellular, unicellular

微生物学 microbiology:

archaea古菌

Bacteria

eukayotes 真核细胞

fungi

parasites

protonoe 原丝体

Viruses

微生物生态microbial ecology:

archaea原始细菌

bacteria 细菌

myxobacteria分枝杆菌

myxococcus粘球菌

microbial eukaryotes微生物真核细菌

viruses病毒

nanoweapon纳米武器：

traA--- a cell surface receptor, whci can discriminate between self and non-self细胞表面受体，可区分自我与非自我

clone克隆 clonal 克隆的

clonemates克隆伙伴

微生物相关学科：

bacteriology 细菌学

immunology 免疫学

myeology真菌学

protozoology 原生动物学

virology病毒学

微生物学专家microbiologist

微弱多数wafer thin majority

微细加工技术microfabrication technology

微小的paltry

微笑smile, to smile

smiley face微笑符脸

to put a smile面带微笑

微信wechat of Tencent腾讯

微型化的miniaturized

微元法infinitesmal method

微元分析法infinitesmal analysis

微宅micro-mansion

微粥样硬化斑microatheroma

Wei 2

为虎作伥to hold a candle to the devil

为难quandary, to corner

为人厚道kind

(蚊子)为患的mosquito-infested

韦 a Chinese surname

韦达定理Vieta’s theorem

设一元二次方程 [IMG_256](https://iknow-pic.cdn.bcebos.com/d0c8a786c9177f3e57f0b6067dcf3bc79e3d56f0) 中，两根x₁、x₂有如下关系：

[IMG_257](https://iknow-pic.cdn.bcebos.com/4b90f603738da97743063320bd51f8198618e394)    ，  [IMG_258](https://iknow-pic.cdn.bcebos.com/4bed2e738bd4b31c021521b08ad6277f9e2ff894)

韦达定理说明了一元二次方程中根和系数之间的关系。

韦达定理不仅可以说明一元二次方程根与系数的关系，还可以推广说明一元n次方程根与系数的关系。

定理：设 [IMG_256](https://iknow-pic.cdn.bcebos.com/dbb44aed2e738bd43768073aac8b87d6277ff974) （i=1、2、3、……n）是方程： [IMG_257](https://iknow-pic.cdn.bcebos.com/242dd42a2834349bc4b9db8ec4ea15ce36d3be7a)

的n个根，记 [IMG_258](https://iknow-pic.cdn.bcebos.com/377adab44aed2e73085a33278a01a18b87d6fa0e) （k为整数），则有：[IMG_259](https://iknow-pic.cdn.bcebos.com/500fd9f9d72a6059e6af54112534349b033bba7a) 。

违背to breach, contravention

to renege on the deal(or commitment)违背协议(承诺)

违背常识to go against common sense

违法to infringe laws，to break the law, to violate the law

trafficker从事违法勾当者

违法的nefarious, to be against the law

delinquency违法犯罪

违反to infringe, to run afoul, infraction

违规队员rule-breaking player

违反某人的意愿to violate one’s wishes

违反条款to flout the terms

违反协议to violate protocol

违反直观的counter-intuitive

违纪irregulation

违禁贸易contraband trade

违抗禁令to defy the ban

违例出牌to renege

违约to default不履行, to default on its obligations

违约的可能性likelihood of default

维(数学用语) dimension

zero dimension点

one dimension 长度

two dimension 长度x 宽度

three dimension 长度x宽度x高度(深度)

four dimension长度x宽度x高度x时间

维持to vindicate

to stay married维持婚姻

维持费maintenance fee

维持下去to stay afloat保持漂浮

维可牢搭扣装置velcro contraption

维生素vitamin coined by a Polish biochemist (vitamins are arranged in alphabetic order according to discovery time, except vitamin K)

A = retinol视黄醇，松香有: β-carotene compounds can convert to it. Deficiency leads to night blindness (my personal experience)

B group B族

B1 = thiamin硫铵素C12H16N4OS: acts as a coenzyme辅酶 in body metabolism. Deficiency leads to beriberi脚气病性心脏病, a disease of the heart and nervous system.

B2 = riboflavin核黄素: an essential part of the reaction of coenzymes辅酶. Deficiency causes inflammation of lining of the mouth and skin. Riboflavin test for low-germ 低细菌or sterile无菌 process technologies; fluorescence荧光 test for examination of clean ability清洁能力 for food, aseptic无菌, pharmacy and chemistry.

B3 = niacin烟酸，尼克酸: an essential part of coenzymes of body metabolism. Deficiency causes inflammation of the skin,vagina,rectum and mouth as well as mental slowing.

B4: adenine 腺嘌呤C5H5N5 (旧称)

B5: calcium pantothenate泛酸钙：benefits for brain health, mental performance, and energy and metabolism in both liquid and dry forms.

B6 = pyridoxine吡哆醇: a cofactor of enzymes. Deficiency leads to inflammation of skin and mouth,nausea, vomiting, dizziness,weakness and anemia.

B7: biotin生物素 d-biotin右旋生物素存在于自然界

B8:?

B9 = folic acid叶酸: an important factor in nucleic acid synthesis (the genetic material). deficiency leads to magaloblastic anemia巨成红细胞贫血.

B10: PABA--- para-amino-benzonic acid对氨基苯甲酸

B11: naftopidil ramification萘哌迪尔衍生物(=B9)

B12: 钴胺素cobalamin又叫aladdin阿拉丁C63H88CoN14O14P(包括氰钴胺cyanocobalamin，羟钴胺hydroxocobalamin，甲钴胺mecobalamin，腺苷钴胺cobamamide) an essential factor in nucleic acid synthesis (the genetic material of all cells). deficiency leads to megaloblastic anemia, as can be seen in pernicious anemia恶性贫血.

C = ascorbic acid抗坏血酸: important in synthesis of collagen胶原, the framework of protein for tissues of the body.deficiency leads to scurvy坏血病, poor wound healing, bone deformity in children.

D: a steroid vitamin类固醇维生素 which promotes absorption and metabolism of calcium and phosphorous. Sunlight promotes adequate vitamin D synthesis in the skin. Deficiency can lead to osteomalacia软骨病 in adults and rickets佝偻病 in children.

E: deficiency can lead to anemia

K: an essential factor in the formation of clotting factors, deficiency can lead to abnormal bleeding.

ascorbic acid抗坏血酸 (维生素C)

niacin烟酸 (vitamin B)

riboflavin核黄素(vitamin B)

唯唯诺诺的人yes man

唯我独尊overweening

唯象phenomenology

围攻to beleaguer, to lay seige to

围棋go (a game played with black and white pieces on a board of 361 crosses)

Google’s AlphaGo computer

围裙apron

围绕着...转to spin (fame, fortune and power名利权)

to resolve around

Wei 3

伟大great, herculean

epic shit伟大的东西（史诗屎）miracle

great rejuvenation伟大复兴

herculean feat of engineering伟大的工程壮举

伪apocryphal

伪丑闻pseudo-scandal假丑闻，冒充丑闻

伪君子hypocrite

伪科学crackpot theory

伪代码pseudocode

伪君子great pretender

伪善hypocrisy

伪信息fake information

伪装策略camouflage strategy

伪造to counterfeit, to forge

伪造的证券forged instrument

伪证(罪) perjury

perjury trap作伪证陷阱

伪装in disguise, to masquerade, camouflaged

伪宗教pseudo religion

委屈to chagrin

a string of grievances一连串的委屈

in an aggrieved tone用委屈的语气

委托to commission, to entrust the stewardship(管理)

commissioned work委托作品

委托给to be consigned

萎缩atrophic

委婉的说法euphemism

尾tail

尾随to shadow, to dangle after, to dog

尾声apilog

猥亵obscenity

猥亵的话语obscene remarks

Wei 4

位图（**Bitmap**），又称**栅格图**（英语：**Raster graphics**）或**点阵图**，是使用[像素](https://baike.baidu.com/item/%E5%83%8F%E7%B4%A0" \t "https://baike.baidu.com/item/Bitmap/_blank)[阵列](https://baike.baidu.com/item/%E9%98%B5%E5%88%97" \t "https://baike.baidu.com/item/Bitmap/_blank) (Pixel-array/Dot-matrix[点阵](https://baike.baidu.com/item/%E7%82%B9%E9%98%B5" \t "https://baike.baidu.com/item/Bitmap/_blank))来表示的[图像](https://baike.baidu.com/item/%E5%9B%BE%E5%83%8F" \t "https://baike.baidu.com/item/Bitmap/_blank)。

位值place value

Ones个位

Tens十位

Hundreds百位

Thousands千位

Million兆

billion十亿

decimal小数点

Tenths十分位

Hundredths百分位

thousandths千分位

(间)位经济meta-economy

Mesa-economy中位经济

Micro-economy微观经济

Macro-economy宏观经济

味道flavor

味蕾taste buds

味精MSG---monosodium glutanate, aginomolo, gournet powder

味素glutamate

胃stomach;

gastrin+胃泌激素

gastric inhibitory polypepetide -胃抑制多肽

motility+胃动素

ghrelin胃饥饿素

胃口大large appetite

胃酸gastric acid, hydrochloric acid

to conquer acid reflux 压制胃酸反流

胃灼热pyrosis

猥亵行为obscenity

未被理睬to fall on deaf ears

未被逮捕at large

未成年的少女underage girl

sexual abuse of minors未成年人的性损害

未充分利用to under-utilize

未改革的unreformed

未婚妻fiancee

未婚女子bachelorette, spinster

未获完胜unfinished victor

未加掩饰的unvarnished

未加抑制的unchecked

未见过的照片unseen photo

未经核实to hang in the air

未经编辑的unredacked

未经过滤的思想unfiltered thought

未经检验的untested

未经立法授权without consent of the legislative

未经训练的untrained

未经消毒的注射器unsterilized syring

未经预先安排的over the transom

未觉察oblivious to

未来可能离任would-be job leaver

未来世界影视乐园futuroscope

未裂缝的uncracked egg

未留下深刻印象to underwhelm

未满足的unslaked

未满足需求unmet demand

未申报的财富undeclared wealth

未确诊的undiagnosed

未守约to stand sb up

未受到充分赏识to under-appreciate sb

未受伤unscathed

未受伤逃脱to escape unhurt

未受损伤intact

未受影响的untouched

未遂事件near-miss accident

未说出口的目标unsaid object

未雨绸缪to batten down the hatches

未知的unbeknownst

未知的领域uncharted territory (turf)

uncharted waters未知水域

未遭破坏的宝石unspoiled gem

畏缩to cringe, to wince, to balk at, to recoil, craven

喂养to feed

breastfed母奶喂养的

bottlefed瓶奶喂养的

formula-fed 配方喂养的

hydrolyzed formula水解配方奶

卫生hygiene, hygienic

hygiene hypothesis卫生假说

hygienist卫生员

dental hygienist，oral hygienist口腔卫生员

卫生棉塞tampon

卫生事业cause of sanitation

慰安妇comfort woman

慰籍salve

as a salve作为一种慰籍

慰劳to express one’s appreciation

慰问电话condolence-call

为人民服务to serve the people

为真实性定规格to gauge the authenticity

为...起见for the sake of

为权力而奋斗to claw one’s way to power

**Wen**

**阴平阳平上声去声**

**曲调melody: l3 3| 3 5| 214| 5 1l**

**样品字sample character:** [温12](http://xh.5156edu.com/html3/8720.html)[文4](http://xh.5156edu.com/html3/13604.html) [稳14](http://xh.5156edu.com/html3/14412.html) [问6](http://xh.5156edu.com/html3/6175.html)

**号表法no.indicator:** 1 2 3 4

**知识对应knowledge counterpart:**

Wen 1

温床hotbed of terrorism and violence

温室hothouse, greenhouse

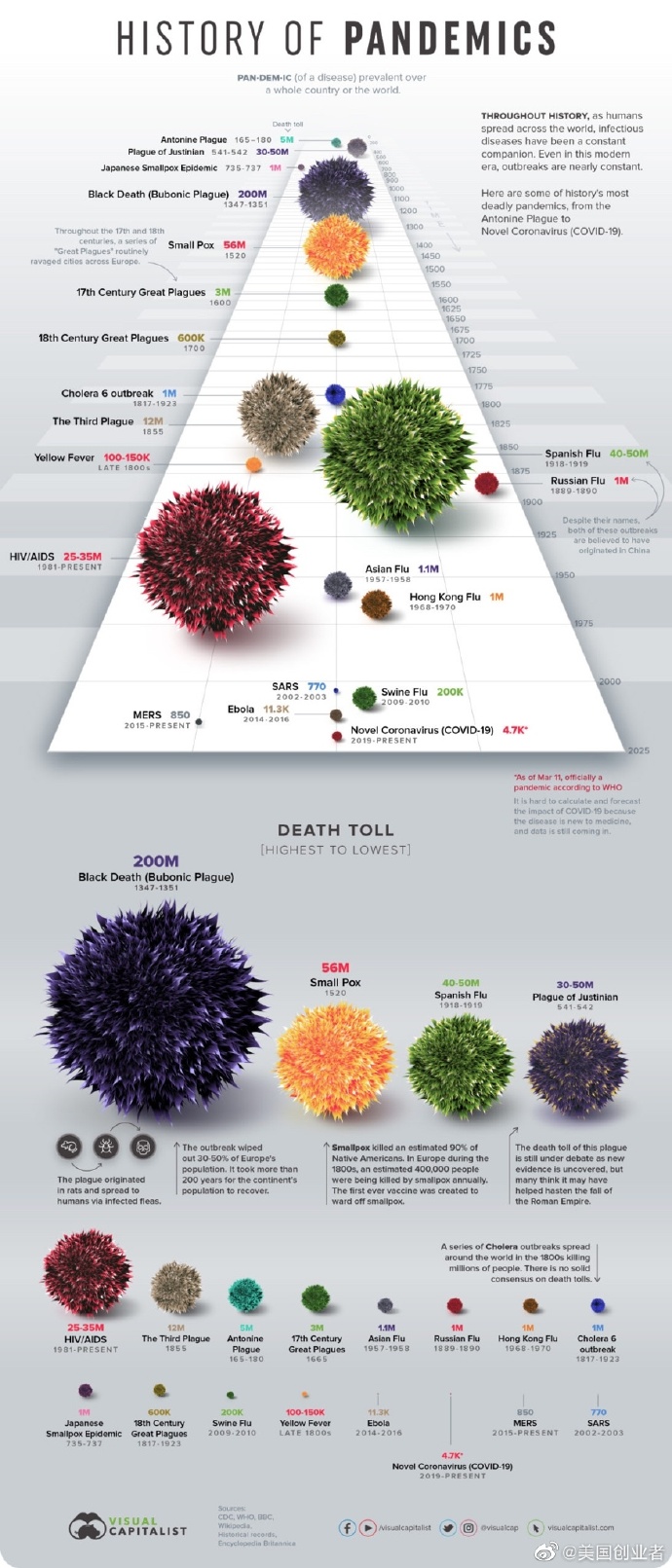
温水tepid water

温馨的故事warm story

温习to brush uo on (the basics)

温压弹thermobaric weaponry （基于云爆弹FAE---fuel air explosive）

瘟疫pandemics, trumpandemics, pestilence, plague鼠疫



Wen 2

文essay, article

文本text

text stopper文本塞子

文采(=彧yu4)literary grace

文裁genre

**Genre** is any form or type of [communication](https://en.wikipedia.org/wiki/Communication" \o "Communication) in any mode (written, spoken, digital, artistic, etc.) with socially-agreed-upon conventions developed over time. Genre is most popularly known as a [category](https://en.wikipedia.org/wiki/Category_of_being" \o "Category of being) of [literature](https://en.wikipedia.org/wiki/Literature" \o "Literature), [music](https://en.wikipedia.org/wiki/Music" \o "Music), or other forms of art or entertainment, whether written or spoken, audio or visual, based on some set of stylistic criteria, yet genres can be aesthetic, rhetorical, communicative, or functional.

文胆 (high official’s stuff member:)

brainpower, brain truster, thinktank智囊

ghostwriter写讲演稿的人

Pen-holder笔杆子

mastermind出谋划策者

military counsellor, chief strategist军师

文法学校grammar school

文化程度educational degree

文化冲击culture shock

文化交汇allogamy, cross-fertilizer互相启发，思想交流

文化偶像cultural icon

文化人cultured man

文化学culturology

文稿代理人literary agent

文集corpus

文件document, file

documentalist文献资料工作者

文件中常见的几个副词frequently-seen adverbs:

Hence group:

Henceforth从今以后， 今后，自此以后

Henceforward （同上）

Here group:

Hereabout(s)在这附近

Hereafter此后，以后，今后

Hereat 因此， 由是

Hereaway(s)在这附近

hereby兹， 特此 (Notice is hereby given that...特此布告)

Herein此中，于此，据此看来，( by the clauses herein

根据(本约)所列条款)

Hereinabove 在上文

Hereinafter在下文，以下，(hereinafter called buyer

以下统称买方)

Hereinbefore 在上文， 以上

Hereinbelow 在下文

Hereinto 到这里面

Here of关于这个，本， 此； (more hereof later

关于这一点详见后文），

（upon the receipt hereof 据此收条）

Hereon=hereupon于是，关于这

Hereto至此，到此地；annexed hereto并入于此

Heretofore前此，以前，迄今为止

Hereunder在下面，在下文，依次；（articles enumerated

hereunder下列商品）

Herewith同此，并此，以此方法；（enclosed herewith并此附上）

（I am sending you herewith a check现附上支票一张）

There group:

Thereabout(s)附近，大约，左右

Thereafter此后

Thereagainst相反，反对，对立地

Thereby因此，所以；（Thereby hangs a tale其中有点蹊跷）

Therein其中，在那里，在那点上

Thereinafter 在下（文）

Thereinbefore在上（文）

Thereof将它，由此

Thereon=therupon在其上，于是，因此

Thereunder 在其下

Therewith以那，于是，立刻，同时

Where group：

Whereabouts在哪一带

Whereby凭什么，怎样

Wherein在哪一点上

Whereon=Whereupon在什么上面

文件传输协议FTP--- file transfer protocol

文件证明documentary proof

文科liberal arts

****现代定义：****college or university studies (such as language, philosophy, literature, abstract science) intended to provide chiefly general knowledge and to develop general intellectual capacities (such as reason and judgment) as opposed to professional or vocational skills

欧洲中世纪定义：The medieval studies comprising the trivium and quadrivium (trivium三科--- grammar, logic, rhetoric; quadrivium四科--- arithmetic, geometry, astronomy, music)

文盲illiterate

(在)文人领导下under the civilian leadership

文身tattoo纹身

文思枯竭to beat writer’s block

文书工作paperwork

文献学philology

文献宇宙docuverse

文胸bras

文雅(的)genteel, refinement

文艺复兴renaissance

文在寅Moon Jae-in (韩国总统)

文字全权委托literal carte blanche

文字题word problem, story problem

文字-话音切换text-to-speech

文字转语音speech synthesis

AV speech synthesizer

AV speech utterance

文字狱literary inquisition

纹身tattoo

纹章blazon

纹状体corpus striatum (left vs right ~)

蚊子mosquitoes (blood is used to make eggs)它可以传染疟疾malaria等多种疾病，中国科学家将沃尔巴克氏体寄生菌wolbachia植入蚊子体内，可使蚊子的生育率减少95%。

mosquito killer蚊子杀手

mosquito repellent驱蚊

mosquitron ultraviolet lamp紫外灯抓蚊器

闻news:

Ugly news, shameful news丑闻

Pink news绯闻

foreign to sb闻所未闻

to be unheard of闻所未闻

闻到...味道to catch or get a whiff of...

to carry a whiff of 带有...味道

闻名遐迩的vaunted rule of law

闻起来好像to smell like...

闻起来臭，吃起来香 smell smelly, taste tasty

纹身tattoo

稳wen 3

稳操胜券的人shoe-in

稳定to steady

source of stability稳定之源

island stability theory稳定岛理论(化学用语)

to leave in limbo处于不稳定状态, 悬而未决

稳心高度(船) metacentric height

Port/starboard左弦/右舷

吻合to dovetail on...

吻吱吱声kiss-squeak

Wen 4

问题problem,question

valid question 合理的问题

hard problem疑难问题

easy problem易解问题

AI-complete人工智能完全问题

问题化to problematize使...悬而未决

**Weng**

**阴平阳平上声去声**

**曲调melody: l3 3| 3 5| 214| 5 1l**

**样品字sample character:** [翁10](http://xh.5156edu.com/html3/17577.html) [奣12](http://xh.5156edu.com/html3/4988.html) [瓮8](http://xh.5156edu.com/html3/13232.html)

**号表法no.indicator:** 1 2 3 4

**知识对应knowledge counterpart:**

Weng 1

(信天)翁albatross

鎓onium, -yliam

Weng 3

奣cloudless sky

Weng 4

瓮satellite cities

瓮中捉鳖a sure catch, to go after an easy prey

**Wo**

**阴平阳平上声去声**

**曲调melody: l3 3| 3 5| 214| 5 1l**

**样品字sample character:** [涡10](http://xh.5156edu.com/html3/8491.html) [我7](http://xh.5156edu.com/html3/10827.html) [卧8](http://xh.5156edu.com/html3/1871.html)

**号表法no.indicator:** 1 2 3 4

**知识对应knowledge counterpart:**

Wo 1

涡轮turbine, turbo-:

Turbofan aeroengine涡扇航空发动机

Turbojet ,, 涡喷

Turboprop ,, 涡桨

Turboshaft ,, 涡轴

Piston engine活塞发动机

窝，穴，躲藏处

den窝，洞穴

hideout 藏匿处

lair躲藏处

nest巢穴

窝藏恐怖分子to harbor terrorists

蜗居narrow dwelling,

莴笋asparagus lettuce

Wo 3

我I, my, mine, me

我反对I object to...

我也算一个 me, too reckoning

“我怕”I am Afraid

You say that you love rain,

but you open your umbrella when it rains.

You say that you love sun,

but you find a shadow spot when the sun shines.

You say that you love the wind,

but you close your windows when wind blows.

This is why I am afraid,

You say that you love me too.

(这首小诗，已成为展现翻译才华的平台：)

Quyuanesque version屈原风格版本

君乐雨兮启伞枝。

君乐昼兮林遮日。

君乐风兮拦帐起。

君乐吾兮吾心噬。

Poetickesque version诗经风格版本

君曰慕雨，启伞避之。

君曰好阳，寻萌拒之。

君曰喜风，阖户离之。

君曰爱吾, 我所畏之。

我坏了 I went kaput.

Wo 4

卧to lie

to lie on one’s back(仰)卧

to lie on one’s side(侧)卧

卧床不起的bed-bound (for 3 years), bedridden

卧底间谍mole

卧室bedroom, bedchamber

cubicle小卧室

斡旋to mediate

heavily brokered大力斡旋

握手to shake hands

沃尔特·里德国家军事医疗中心

Walter Reed national military medical center, 15km north from White House, No. 71 is VIP treatment ward. There is a first lady’s suite .

Wu

**阴平阳平上声去声**

**曲调melody: l3 3| 3 5| 214| 5 1l**

**样品字sample character: 污** 无 五 [卧8](http://xh.5156edu.com/html3/1871.html)

**号表法no.indicator:** 1 2 3 4

**知识对应knowledge counterpart:**

Wu 1

污电力dirty power (50/60 hz)

污蔑vilification, to offer dirt, to stigmatize

stigmatized illness见不得人的疾病

污名stigma

to stigmatize污名化

污染to pollute, to contaminate, to taint

污秽的filthy

污水坑sinkhole

乌龟tortoise 不爱动但可长寿，人为何不行

冷血动物,变温动物 ectothermic animals

vs

热血动物，恒温动物idiothermous animals, warmblooded animals

骨头抱着肉bones surround muscles

vs

肉抱着骨头muscles surround bones

230多块骨头bones, 90多个关节joints

vs

206块骨头bones, 230个关节joints

乌合之众rabble暴民

乌黑的头发jet black hair

乌托邦Utopia vs dystopia反乌托邦

乌贼, 墨斗鱼squid, inkfish, cuttlefish

squid-baited hook乌贼诱饵钩

屋顶公园rooftop garden

屋脊fastigium

屋檐eave

屋顶roof, rooftop

to unite everything under one roof把一切归顺在一个名下

rooftop terrace屋顶平台

(在同一个)屋檐下 under one roof

巫with, wizard, sorceress

巫毒邪法仪式voodoo rituals

巫师shamans

巫术sorcery, witch craft

巫山云雨=男女欢合a rendevous between 2 lovers

Wu 2

无nix

无表情的poker-faced

无差错mistake-free

无成功希望的人nonstarter

无成果fruitless

无耻的cheaky

无处不在ubiquitous, omnipresent

无带子的鞋slip-on shoes

无胆量的gutless

无弹药to run out of ammo

无敌感sense of invincibility

无地自容crash and burn

无底洞bottomless pit

无定形的amorphous

amorphous silicon thin-film cell无定形硅薄膜电池

无端的gratuitous

ungrounded accusations无端指控

无法摆脱to be stuck with it

无法抗拒can’t resist doing sth

无法满足的insatiable

无法破解的通信网unhackable communication net

(使)无法使用to unusable(all the devices left at the airport)

无法停止unstoppable

无法证实的unprovable

无法脱身的困境quagmire, catch-22

无法形容beyond description

无法形容的行为unspeakable act

无风险risk-free

90-day money back guarantee 90天退款保证

无缝边界 seamless border

无缝浏览网页to browse the web seamlessly

无根据的ill-founded, baseless

无辜的innocent, innocence

innocent civilian无辜平民

innocent circumstance无辜的情况

无广告ad-free

无核化denuclearization, to de-nuclearize

无花果figs

无计划的发展sprawl

无监督式机器学习=神经网络

unsupervised machine learning=neural network

无精打采laziness

to feel blue感到无精打采

无拘束的unbridled, untettered

无可辩驳to preempt the debate

无过失infallibility

无害通过innocent passage

无核化to denuclearize

无济于事to yield no results

无经验的人fledgling

无可挑剔的impeccable

无赖rogue

无理数irrational numbers:

PI,π--- circle/diameter;3月14日下午1点59分26秒；

Mathematical formula: π/4 = 1-1/3+1/5-1/7+1/9...;

Mind-blowing 22,459,157,718,361 decimal points

Pi aficionado狂热爱好者

无礼的irreverent, brash, disrespectful

无礼的言行blasphemy, flippancy

无聊的jabbermocky, in humdrum, bored, frivolous

无名小辈D-lister

无名英雄unsung hero

无能incompetence

colossal or outright incompetence非常无能

lame duck leader无能的领导

无黏流动inviscid flow

无农药污染pesticide-free

无篷车open-top car (检阅用的)

无屁豆beano

无牵无挂的unencumbered

无枪世界gun-free world

无名英雄unsung hero

无情callous

无情的打击merciless strike

无穷小infinitesmal expressed by dx, dy

无穷原则principle of infinite

无人机drone，pilotless vehicle, unmanned vehicle, UAV--unmanned aerial vehicle

tethered drone绳子栓着的无人机

drone-mounted video camera装在无人机上的录像机

drone fleet无人机群

RQ-170(美国)隐形无人机，sentry哨兵 designed by 洛马臭鼬工厂skunk works

无人驾驶的公交车driverless bus

无伤大雅innocuous

无神论的atheist vs atheist

无声拍卖silent auction

(举行)无声抗议to hold silent protests

无生命危险non-life threatening

无生气的lethargic

无实际意义的to be moot

无视，不顾in defiance of

in defiance of the UN ban无视联合国禁令

无视制裁to flout sanction

无事生非much about

无数的myriad

over the countless millennia 在无数年的时间里

无损的damage-free

无所不包的all-encompassing

无所不在的omnipresent

无所不知know-it-all

无条件without preconditions

无头躯干headless torso

无头尸体(斩首尸体)decapitated body

无网格的element-free

无谓的悲剧senseless tragedy

无畏的，强悍的intrepid

无污点的blemish-free

无瑕疵的impeccable, unblemished

无限放大to magnify a slight issue without restraint

无限后退infinite regress vs vicious circle恶性循环

无限小的infinitesimal

无限行为boundless conduct

无限制的open-ended

无限深的空白void of infinite depth

无现货out of stock

无效null and void, to be void, invalid

无线耳机wireless earphone: echobeat

wireless charging device (circacharger)无线充电器

无线电radio

radio quiet zone无线电静区

无线局域网wifi---wireless fidelity

wifi FPV--- First person view无线第一人称视角

（控制飞行自拍机的软件）

wifi booster (for tablet, ipad)无线促进器

wifi deadspot 无线非灵敏区

wifi router无线路由器

wireless network technology无线网络技术

无线(移动)通信技术代别wireless (mobile) communication technology

1G--- analog cellular phone calls mobility

2G--- digital phone calls and messaging,

GSM:global system for mobile communication

3G--- high speed IP data network packet switching replaced circuit switching

4G--- all-IP data network

TD/LTE: time division/long term evolution分时/长期演进(中国标准)

FDD/LTE

5G (see details below)

与ipv6的address 量有关：2128 about3.4x1038

与速率有关

与赫茨有关

6G

无线应用通讯协议WAP--- wireless application protocol

用户可以借助无线手持设备，如

掌上电脑Palm，[手机](https://baike.baidu.com/item/%E6%89%8B%E6%9C%BA" \t "https://baike.baidu.com/item/%E6%97%A0%E7%BA%BF%E5%BA%94%E7%94%A8%E9%80%9A%E8%AE%AF%E5%8D%8F%E8%AE%AE/_blank)handsets，呼机beeper，双向广播didirectional TV broadcasting，智能电话smart phone等，通过WAP获取信息。

WAP支持绝大多数[无线网络](https://baike.baidu.com/item/%E6%97%A0%E7%BA%BF%E7%BD%91%E7%BB%9C" \t "https://baike.baidu.com/item/%E6%97%A0%E7%BA%BF%E5%BA%94%E7%94%A8%E9%80%9A%E8%AE%AF%E5%8D%8F%E8%AE%AE/_blank)，包括GSM(global system for mobile communications)、 CDMA(code division multiple access)、CDPD(cellular digital packet data)、 PDC(personal digital cellular)、 PHS(personal handy-phone system)、TDMA(time division multiple access)、FLEX、 ReFLEX、 iDen(integrated digital enhanced network)、TETEA(teenage electronic technology enthusiats alliance)、DECT(digital enhanced cordless telecommunication)、 DataTAC 和Mobitex。 所有操作系统都支持WAP，其中专门为手持设备设计的有PalmOS，EPOC(epoch of personal conveniece)，Windows CE，FLEXOS，OS/9及[JavaOS](https://baike.baidu.com/item/JavaOS" \t "https://baike.baidu.com/item/%E6%97%A0%E7%BA%BF%E5%BA%94%E7%94%A8%E9%80%9A%E8%AE%AF%E5%8D%8F%E8%AE%AE/_blank)等。

一些手持设备，如掌上电脑，安装微型[浏览器](https://baike.baidu.com/item/%E6%B5%8F%E8%A7%88%E5%99%A8" \t "https://baike.baidu.com/item/%E6%97%A0%E7%BA%BF%E5%BA%94%E7%94%A8%E9%80%9A%E8%AE%AF%E5%8D%8F%E8%AE%AE/_blank)后，借助WAP接入Internet。 微型[浏览器](https://baike.baidu.com/item/%E6%B5%8F%E8%A7%88%E5%99%A8" \t "https://baike.baidu.com/item/%E6%97%A0%E7%BA%BF%E5%BA%94%E7%94%A8%E9%80%9A%E8%AE%AF%E5%8D%8F%E8%AE%AE/_blank)使用的内存很少，可较好的解决手持设备内存少和[无线网络](https://baike.baidu.com/item/%E6%97%A0%E7%BA%BF%E7%BD%91%E7%BB%9C" \t "https://baike.baidu.com/item/%E6%97%A0%E7%BA%BF%E5%BA%94%E7%94%A8%E9%80%9A%E8%AE%AF%E5%8D%8F%E8%AE%AE/_blank)[带宽](https://baike.baidu.com/item/%E5%B8%A6%E5%AE%BD" \t "https://baike.baidu.com/item/%E6%97%A0%E7%BA%BF%E5%BA%94%E7%94%A8%E9%80%9A%E8%AE%AF%E5%8D%8F%E8%AE%AE/_blank)不足的限制。 虽然WAP能支持[HTML](https://baike.baidu.com/item/HTML" \t "https://baike.baidu.com/item/%E6%97%A0%E7%BA%BF%E5%BA%94%E7%94%A8%E9%80%9A%E8%AE%AF%E5%8D%8F%E8%AE%AE/_blank)和[XML](https://baike.baidu.com/item/XML" \t "https://baike.baidu.com/item/%E6%97%A0%E7%BA%BF%E5%BA%94%E7%94%A8%E9%80%9A%E8%AE%AF%E5%8D%8F%E8%AE%AE/_blank)，但WML才是专门为小屏幕和无键盘手持设备服务的语言。WAP也支持[WMLScript](https://baike.baidu.com/item/WMLScript" \t "https://baike.baidu.com/item/%E6%97%A0%E7%BA%BF%E5%BA%94%E7%94%A8%E9%80%9A%E8%AE%AF%E5%8D%8F%E8%AE%AE/_blank)。这种[脚本语言](https://baike.baidu.com/item/%E8%84%9A%E6%9C%AC%E8%AF%AD%E8%A8%80" \t "https://baike.baidu.com/item/%E6%97%A0%E7%BA%BF%E5%BA%94%E7%94%A8%E9%80%9A%E8%AE%AF%E5%8D%8F%E8%AE%AE/_blank)类似与JavaScript，但对[内存](https://baike.baidu.com/item/%E5%86%85%E5%AD%98" \t "https://baike.baidu.com/item/%E6%97%A0%E7%BA%BF%E5%BA%94%E7%94%A8%E9%80%9A%E8%AE%AF%E5%8D%8F%E8%AE%AE/_blank)和[CPU](https://baike.baidu.com/item/CPU" \t "https://baike.baidu.com/item/%E6%97%A0%E7%BA%BF%E5%BA%94%E7%94%A8%E9%80%9A%E8%AE%AF%E5%8D%8F%E8%AE%AE/_blank)的要求更低，因为它基本上没有其他脚本语言所包含的无用功能。

无效void

无效审判mistrial

无懈可击的watertight

无信仰者infidel异教徒

无需天才去干It doesn’t take a genius to do

无烟煤anthracite

无翼鸟kiwi

无以伦比的身份象征peerless status symbol

无疑地far and away

无意识的暗示unintentional physical cue(s)

无意义的行为senseless act

无意中发现to stumble on or upon

无意中听到to overhear a conversation

无液气压器aneroid

无益的unhelpful

无用的wimpy, wussy

无用(数据)输入garbage in vs garbage out输出

无原则的unprincipled

无约束without constraints

无政府主义者anarchist

无症候患者asymptomatic patient

无证据断言say-so

无证移民undocumented immigrant

无知ignorance, ignorant

无主珍宝treasure trove

无止尽的ad infinitum

无罪释放to acquit, acquittal

无子弹out of bullets

无作为Inaction，to do nothing

吴下阿蒙=学识尚浅knowledge is shallow

五wu 3

五重唱，五重奏quintet

五环路fifth ring road (of Beijing)

五行与干支：

五种条件在天上形成五星，即金星、木星、水星、火星、土星，在地上就是金、木、水、火、土五种属性，在人就是仁、义、礼、智、信五种德性。古代人认为这五类属性在天地之间形成串联，如果天上的木星有了变化、地上的木类和人的仁心都随之产生变异，迷这色彩十分浓厚的占星术就是以这种天、地、人三界相互影响为理论基础衍生而来的。

五行相生 金生水，水生木，木生火，火生土，土生金。

五行相克 火克金，金克木，木克土，土克水，水克火。

天干五行 甲乙同属木，甲为阳木，乙为阴木；丙丁同属火，丙为阳火，丁为阴火，戊巳同属土，戊为阳土，巳为阴土；庚辛同属金，庚为阳金，辛为阴金；壬癸同属水，壬为阳水，癸为阴水。

地支五行 寅卯属木，寅为阳木，卯为阴木；己午属火，午为阳火，巳为阴火；申酉属金，申为阳金，酉为阴金，子亥属水，子为阳水，亥为阴水；辰戌丑未属土，辰戌为阳土，丑未为阴土。

干支五行

甲子乙丑海中金，丙寅丁卯炉中火，戊辰己巳大林木，庚午辛未路旁土，

壬申辛酉剑锋金，甲戌乙亥山头火，丙子丁丑涧下水，戊寅己卯城头土，

庚辰辛巳白腊金，壬午癸未杨柳木，甲申乙酉泉中水，丙戌丁亥屋上土，

戊子己丑霹雳火，庚寅辛卯松柏木，任辰癸巳长流水，甲午乙未沙中金，

丙申丁酉山下火，戊戌己亥平地木，庚子辛丑壁上土，壬寅癸卯金箔金，

甲辰乙巳复灯火，丙午丁未天河水，戊申己酉大驿土，庚戌辛亥钗钏金，

壬子癸丑桑柘木，甲寅乙卯大溪水，丙辰丁巳水各土，戊午己未天上火，

庚申辛西石榴木，壬戌癸亥大海水。

五元美钞fiver

“伍”的脸谱makeups of “five”

基数cardinal: five, 5

序数ordinal: fifth, 5th

记数制numeral system: quinary

因数分解facterization: prime

质数 prime 5

约数divisor

希腊前缀Greek prefix: pent-/penta-

罗马前缀Roman prefix: quinqu-lquinque-;quint-

二进制binary: 101

三进制ternary:12

五进制quinary:10

六进制senary:5

八进制octal: 5

十二进制duodecimal:5

十六进制hexadecimal:5

二十进制vigesimal：5

三十六进制base36:5

取幂exponentiation:

5x: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

5,25,125,625,3125,15625,78125,390625,1953125,9765625

X5: 1,32,243,1024,3125,7776,16807,32768,59049,100000

五彩缤纷的colorful

五重唱quintet

五角大楼的说法in pentagonese

五连板pentemino

五眼联盟five-eye alliance(美英加澳新情报联盟)

美国的CIA, FBI, NSA

英国的MI5, MI 6 (military intelligence service called “spooks”)

加拿大的CSIS, CDI

澳大利亚的ASIS, DIO

新西兰的NZSIS, DIS

五脏vicera vs bowels六腑

5G---第五代移动通信级数the 5th mobile communication technology: wireless network technology, 5G will give your phone a speedier connection---about 10 times faster than 4G.that is enough to stream“8G”video or download a 3D in 30 seconds,while 4G would take 6 minutes. Sensors, thermostats, cars, robots and other new technologies will connect to 5G one day.

Predecessors前任:

2G in 1991

3G in 1998

4G in 2008

Contents内容:

Self-driving cars自驾汽车

Virtual reality虚拟现实

Smart cities智慧城市

Networked robots网络化机器人

Leading cell phone carriers手机的主要承载者:

Verizon (VZ)美国的威瑞森

AT&T(T)美国的电话电报公司

1. mobile(tmus)德国的电信公司

Sprint美国的

Leading microchip makers微芯片的主要制造商:

Qualcomm美国的高通

Intel美国的英特尔

Leading network equipment companies主要网络设备公司:

Nokia（NOK）芬兰的诺基亚

Erisson 瑞典的爱立信

Huawei 中国的华为

(information as of April 2018)

武断地说或做to pontificate

武力外交政策jingoism

武(器)库arsenal

武力消除to remove by force

武力威胁saber-rattling

武器weapon

weapon-grade level武器级水平

to weaponize武器化

weaponeer武器专家

weaponization of tariffs关税武器化

武术martial arts

武装包围armed siege

武装直升机gunship

捂盖子to keep the lid on

捂住鼻子和嘴to hold a cloth over one’s noses and mouth

舞蹈指导choreographer

舞台工作人员stagehand

舞文弄墨者wordsmith

侮辱(某人) to slap, to insult( sb), affront, to humiliate

rude insult粗鲁的侮辱

ultimate insult终级侮辱

to insult opponents 侮辱对手

午饭，午餐lunch

lunch recess or break吃午饭时间

Nothing comes from nothing.世上没有免费的午餐

Wu 4

物substance, material

chemical compound化合物

crystalline hydrate结晶水合物 (cf.专文)

石膏 CaSO4´2H2 O

pure substance纯净物

chelate compound螯合物

cluster compound簇合物

complex compound络合物

coordination compound配合物

organic substance有机物

inorganic substance无机物

mixture混合物

物物交易barter

物理基础公式 basic formulas in physics:

**Kinematics运动**  
**v**ave = **Dx/**Dt          **a**ave = **Dv/**Dt  
v = v0 + at                 x = x0 + v0t + 1/2at2         v2 = v02 + 2aDx  
g=9.81m/s2 = 32.2ft/s2 (near Earth’s surface)

**Dynamics动力**  
S**F** = m**a**Fg = Gm1m2 / R2        Fg = mg (near Earth’s surface)  
fs,max = msFN           Gravitational constant, G = 6.7 x 10-11 N.m2/kg2  
fk = mkFN                       ac = v2 / R = w2R

**Work & Energy功能**  
WF = FScos(q)        KE = 1/2mv2      WNET = DKE = KEf - KEi  
Wnc = DE = Ef - Ei = (KEf + PEf) - (KEi + PEi)  
Wgrav = -mgDy   PEgrav = mgy

**Impulse & Momentum冲量与动量**  
Impulse**I** = **F**aveDt = D**p**      **F**aveDt = D**p** = m**v**f - m**v**i**F**ave = D**p**/Dt  
S**F**extDt= D**P**total  = **P**total,final**- P**total,initial     (momentum conserved if S**F**ext = 0)  
**X**cm = (m1**x**1+ m2**x**2)/ (m1+m2)

**Rotational Kinematics转动运动**  
w = w0 + at               q = q0 + w0t + 1/2at2       w2 = w02 + 2aDq  
vT = wR    aT = aR   ( so for rolling without slipping v = wR    a = aR )

**Rotational Statics & Dynamics转动静力与动力**  
t = Fr sin q  
St = 0 and SF=0  (static equilibrium)  
St = Ia  
I = Smr2   (for a collection of point particles)  
I = 1/2MR2(solid disk or cylinder)   I = 2/5MR2(solid sphere)   I = 2/3MR2(hollow sphere)  
I = MR2(hoop or hollow cylinder)     I = 1/12 ML2 (uniform rod about center)  
W = tq    (work done by a torque)  
**L** =I**w**        S**t**extDt = D**L**     (angular momentum conserved if S**t**ext = 0)  
KErot=1/2Iw2=L2/2IKEtotal=KEtrans + KErot=1/2mv2+ 1/2Iw2

**Simple Harmonic Motion简谐运动**  
Hookes Law:  Fs = -kx  
Wspring = 1/2kxi2 - 1/2kxf2   PEspring = 1/2kx2  
x(t) = Acos(wt)   or   x(t) = Asin(wt)  
v(t) = -Awsin(wt)   or   v(t) = Awcos(wt)  
a(t) = -Aw2cos(wt)   or   a(t) = -Aw2sin(wt)  
w2 = k/m,            T = 2p/w,        f = 1/T  
xmax= A        vmax = wA      amax= w2A  
For a simple pendulum  w 2 = g/L

**Fluids流体**P2 = P1 + rg(y1-y2)  change in pressure with depth  
Buoyant force FB= rgVdis= weight of displaced fluid  
Flow rate Q = v1A1 =  v2A2      continuity equation   (area of circle A = pr2)  
P1 + 1/2rv12 + rgy1 = P2 + 1/2rv22 + rgy2    Bernoulli equation  
rwater = 1000 kg/m3                   1m3 = 1000 liters  
r = M/V                            1 atmos. = 1.01 x 105 Pa

**Temperature and Heat温度与热量**temperature:  
             Celsius (TC) to Fahrenheit (TF) conversion: TC=(5/9)\*(TF-32)  
             Celsius (TC) to Kelvin (TK) conversion: TK=TC+273  
DL = aL0DT       DV = bV0DT      thermal expansion  
aaluminum = 23 x10-6and asteel = 12 x10-6(linear expansion coefficients)  
Q = cMDT  specific heat capacity  
cwater = 4186 J/kg/oC   cice = 2000 J/kg/oC  
caluminum = 900 J/kg/oC   csteel = 450 J/kg/oC  
Q = LfM   latent heat of fusion           Q = LvM   latent heat of vaporization  
Lf,water = 33.5 x104 J/kg     Lv,water = 22.6 x105 J/kg  
Q = kADTt/L   conduction  
ksteel = 14 J/s/m/oC     kaluminum = 240 J/s/m/oC  (thermal conductivities)  
Q = esT4At      radiation      (s = 5.67x10-8J/s/m2/oK4)  
Pnet = esA(T4-T04)            (surface area of a sphere A = 4pr2 )

**Ideal Gas & Kinetic Theory理想气体与动力理论**NA=6.022 x 1023   molecules/mole        Mass of carbon-12 = 12.000u  
PV = nRT = NkBT      R = 8.31 J/mol/K      kB = R/NA = 1.38 x 10-23 J/K  
KEave = 3/2kBT =  1/2mvrms2    U =  3/2NkBT (internal energy of a monatomic ideal gas)  
vrms2   =  3kBT/m   =  3RT/M  (M = molar mass = kg/mole)

**Thermodynamics热动力**Q = DU + W  (1'st law)

U =  (3/2)nRT   (internal energy of a monatomic gas for fixed n)

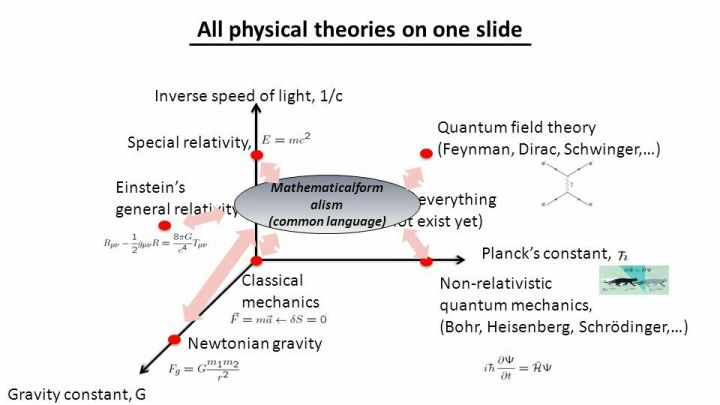
CV= (3/2)nR = 12.5 J/oC/mol   (specific heat at constant volume for a monatomic gas)

QH= QC + W  (heat engine or refrigerator)  
e = W/QH = 1 - QC/QH     emax = 1 - TC/TH (Carnot engine)  
QC/QH = TC/TH   when efficiency is maximum (2'nd law)  
W = PDV  (work done by expanding gas)

**Harmonic Waves谐波**v  =  l / T = l f  
v2 = F/(m/L)  for wave on a string  
v2 = 1.4kBT/m for sound  
v = c = 3 x 108m/s  for electromagnetic waves (light, microwaves, etc.)  
I = P / (4pr2)  (sound intensity)

**Sound Waves声波**loudness: β=(10 dB) log10(I/I0), where I0=10-12 W/m2  
IMG_256

物理理论



经典力学在宏观低速下非常正确

侠义相对论是宏观高速平直时空

广义相对论是宏观高速引力

量子物理是微观低速

量子场论是微观高速

物联网IoT---internet of things (5g)

Which may connect all household appliances devices such as

Gas stove

Lamps

Microwave oven

TV

Radio

Mobile phone

DDoS attack---distributed denial of service attack

分布式拒绝服务攻击

物流，后勤logistics

intralogistics内部物流

autonomous logistics 自动物流

物质鼓励to incentivize

以物换物to barter

以物质刺激进行鼓励to incentivize

勿打草惊蛇let sleeping dog lie

勿谓言之不预don’t say we didn’t warn you

误 mis-

to miscall误称，叫错名字

to misinform误传的

to misguide误导

to misconstrue误解

to fight misinformation and fake news误报

miscarriage of justice误判, 审判不公

missense误义

missense mutation误义突变

误区myth

误人子弟的fraught

误入to stray into

误杀manslaughter

误投邮件to misdirect mail

误用perversion

误植域名typosquatting

悟savvy悟出，悟性, 对...精通：

savvy--- synthesis, analysis, extraction.

悟性--- 综合， 分析， 萃取

Math-savvy

Physics-savvy

Chemistry-savvy

Tech-savvy

Money-savvy

Market-savvy

Fashion-savvy

务实business-like

雾剂aerosol

amiloride aerosol雾化阿米洛利

雾谷foggy bottom (美国国务院)

戊(wu4) number 5 in the heavenly (celestial) stems

戊戌政变coup detat of 1898 in Qing dynasty

戌(xu1) number 11 in the earthly branches

戍(shu4) garrison

garrison command卫戍区

戎(rong2) army, military affairs军队

martial attire 戎装

military horse 戎马

to change from civilian pursuits to military career

投笔从戎

戊脉安，异博定verapamil (belonging to calcium channel blocker是一种冠状动脉扩张药)

忤disobedient不服, uncongenial不相称, unfilial不孝

**Western knowledge elements:**

**字符(含义)**

**形式语言**

**(formal language)**

单个拉丁字母：

W w

1. 代表 “瓦特”---电力单位（与A(ampere), V(volt)连用）
2. 代表“宽度”，与L(length), H(height)连用
3. 代表“四维”，与x,y,z 连用

字符串：

WMAP--- Wilkinson Microwave Anisotropy Probe威尔金森微波各向异性探测器

WS-10B涡扇-10B航空发动机的综合性能：  
空气进量 118kg/sec，  
涡轮前温度为1747k，  
涡扇10加力风扇的性能的一些主要数据为如下：  
高、低转子的转速分转别是16.2 kr/min，13 kr/min，  
涵道比0.78，  
增压比 (进口：出口) 32，323 m/s和334 m/s，  
空流量M=100 kg/s，  
主燃烧室及加力燃烧室供油量分别为2.6 kg/s，2.85 kg/s，  
最大推力76.2kn，  
加力最大推力132kn，  
涡扇10装有无锡航空发动机研究所研制的FADEC。

 WWW--- world wide web万维网