Some High School Calculator Facts To Memorize

Get Ready

Get Set

GO !

1 hour =_____minutes **60**

April =_____days **30**

January =_____days **31**

1 mile =_____feet **5280**

1 square mile =_____acres **640**

1 quart =_____pints **2**

1 pint =_____liquid ounces **16**

1 pound (avdp)=____ ounces (avdp) **16**

1 liter ≈ _____ quarts **1.0567**

1 gallon =_____ cubic inches **231**

1 mile/hour =_____feet/second **22/15**

π Radians =_____degrees **180**

1 teaspoon =_____liquid ounce **1/6**

1 tablespoon =____ liquid ounces **1/2**

1 cubic foot ≈ _____ gallons **7.481**

1 pound ≈ _____ grams **453.592**

1 acre =_____square feet **43560**

1 meter = _____centimeters **100**

1 inch =_____centimeters **2.54**

1 kilometer =_____millimeters **1,000,000**

1 mile =_____yards **1760**

1 cup =_____ ounces **8**

1 km/hr =_____ m/s **5/18**

1 square foot =_____ square inches **144**

1 cubic foot =_____ cubic inches **1728**

1 cubic yard =_____ cubic feet **27**

1 gallon =_____ ounces **128**

1 quart =_____ ounces **32**

gravity acceleration =_____ ft/sec^2 **-32.174**

Formula for area of a square **$(\text{side})^2$**

Formula for area of circle **$\pi(\text{radius})^2$**

Formula for perimeter of scalene triangle

(side 1) + (side 2) + (side 3)

Formula for circumference of circle given diameter

$\pi(\text{diameter})$

Length of a football field (without end zones)

100 yards

Number of cards in a card deck **52**

Formula for changing degrees Fahrenheit to degrees Centigrade **$°C = (5/9)(°F - 32)$**

Pythagorean Formula for Right Triangle

$(\text{leg } 1)^2 + (\text{leg } 2)^2 = (\text{hypotenuse})^2$

Formula for Sine of an angle

(side opposite angle)/hypotenuse

Formula for Cosine of an angle

(side adjacent angle)/hypotenuse

Formula for Tangent of an angle

(side opposite angle)/(side adjacent angle)

Formula for perimeter of rhombus **4(side)**

Formula for area of triangle given base and height.

(1/2)(base)(height)

Formula for area of rhombus given both diagonals.

(1/2)(diagonal 1)(diagonal 2)

Formula for area of trapezoid given both parallel bases and altitude.

(1/2)(base 1 + base 2)(altitude)

Formula for perimeter of equilateral triangle

$$3(\text{side})$$

Formula for area of equilateral triangle given a side

$$\frac{(\text{side})^2\sqrt{3}}{4}$$

Formula for area of equilateral triangle given an altitude (**h**)

$$\frac{h^2\sqrt{3}}{3}$$

Formula for area of a segment given radius (**R**) and angle θ in radians

$$\mathbf{(1/2)\,R^2(\theta - \sin\theta)}$$

Formula for area of sector given radius (**R**) and angle θ in radians

$$\mathbf{(1/2)\,R^2\theta}$$

Formula for law of sines given angles *A*, *B*, *C* and sides **a**, **b**, **c**.

$$\mathbf{\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}}$$

Total number of degrees in a triangle **180**

Total number of radians in a triangle **π**

Formula for area of isosceles triangle given base and altitude **(1/2)(base)(altitude)**

Formula for volume of sphere given radius

$$\frac{4}{3}\pi(radius)^3$$

Formula for surface area of sphere given radius

$$4\pi(\text{radius})^2$$

Formula for radius of circumscribed scalene triangle given sides **a**, **b**, and **c**.

$$\frac{abc}{4(\Delta \text{ area})}$$

Formula for semiperimeter of scalene triangle given sides **a**, **b**, and **c**.

$$\frac{a+b+c}{2}$$

Formula for volume of right cylinder given radius (**R**) and length (**L**).

$\pi R^2 L$

Formula for total surface area of right cylinder given radius (**R**) and length (**L**)

$2\pi R(R + L)$

Formula for volume of cube

$(side)^3$

Formula for lateral surface area of right cylinder given radius (**R**) and length (**L**)

$$\mathbf{2\pi RL}$$

Formula for total surface area of hemisphere given radius (**R**).

$$3\pi R^2$$

Formula for surface area of cube

$$\mathbf{6(side)^2}$$

Formula for volume of any pyramid given base area and altitude

$$\left(\frac{\text{altitude}}{3}\right) \times (\text{area of base})$$

Formula for diagonal of square given side

$$(\text{side})\sqrt{2}$$

Formula for perimeter of rectangle

$$2(\text{length} + \text{width})$$

Formula for lateral surface area of a Square Base Pyramid given angle between slant height and base (α) and side length (**a**).

$$\frac{a^2}{\cos\alpha}\sqrt{1+\sin^2\alpha}$$

Formula for area of square given diagonal (**d**).

$$\frac{d^2}{2}$$

Formula for area of rectangle

(length)(width)

Formula for perimeter of parallelogram given two adjacent sides **2(side 1 + side 2)**

Formula for area of parallelogram given parallel sides and altitude **(side)(altitude)**

Formula for perimeter of square **4(side)**

Formula for area of scalene triangle with sides **a**, **b**, **c** and semiperimeter (**s**). {Heron's formula}

$$\sqrt{s(s-a)(s-b)(s-c)}$$

Formula for volume of frustrum of right circular cone given height (**h**), radius of lower base ($\mathbf{R_1}$), radius of upper base ($\mathbf{R_2}$).

$$\frac{1}{3}\pi h\left(R_1^2 + R_2^2 + R_1 R_2\right)$$

Formula for lateral surface area of frustrum of right circular cone given slant height (**s**), radius of lower base ($\mathbf{R_1}$), radius of upper base ($\mathbf{R_2}$).

$$\pi s(R_1 + R_2)$$

Formula for law of cosines given sides **a**, **b**, **c** and angle opposite side **c**.

$$C^2 = a^2 + b^2 - 2abcosC$$

Formula for total surface area of frustrum of right circular cone given slant height (**s**), radius of lower base ($\mathbf{R_1}$), radius of upper base ($\mathbf{R_2}$).

$$\pi\left(R_1^2 + R_2^2 + \left(R_1 + R_2\right)s\right)$$

Formula for volume of a right circular cone given radius (**R**) and height (**h**).

$$\frac{1}{3}\pi R^2 h$$

Formula for radius of circle inscribed in equilateral triangle

$$\frac{(\text{side})\sqrt{3}}{6}$$

Formula for radius of circle circumscribed about an equilateral triangle

$$\frac{(\text{side})\sqrt{3}}{3}$$

Formula for altitude to hypotenuse (**c**) with legs **a** and **b**.

$$ab/c$$

Formula for radius of circle inscribed in right triangle with legs **a**, **b** and hypotenuse **c**.

$$\frac{a+b-c}{2}$$

Formula for radius of circle circumscribed about a right triangle with legs, **a**, **b** and hypotenuse **c**.

$$\frac{c}{2}$$

Formula for surface area of a right circular cone given radius (**R**) and slant height (**s**).

πRs

Formula for total surface area of a right circular cone given radius (**R**) and slant height (**s**).

$\pi R(R + s)$

Formula for radius of circle inscribed in a scalene triangle given sides **a**, **b**, **c**, and semiperimeter (**s**).

$$\sqrt{\frac{(s-a)(s-b)(s-c)}{s}}$$

Formula for constant acceleration (**a**) given initial velocity ($\mathbf{v_o}$), final velocity (**v**), initial time ($\mathbf{t_o}$) and final time(**t**)

$$\mathbf{a = \frac{v - v_o}{t - t_o}}$$

Formula for final velocity (**v**) given initial velocity ($\mathbf{v_o}$), acceleration (**a**), initial time ($\mathbf{t_o}$) and final time(**t**)

$$v = v_o + a(t - t_o)$$

Formula for final distance (**d**) given initial distance ($\mathbf{d_o}$), initial velocity ($\mathbf{v_o}$), final velocity (**v**), acceleration (**a**), initial time ($\mathbf{t_o}$) and final time(**t**)

$$d = d_o + v_o(t - t_o) + \frac{1}{2}a(t - t_o)^2$$

Formula for maximum horizontal distance ($\mathbf{d_{HMax}}$) given initial velocity ($\mathbf{v_o}$) and launch angle ($\boldsymbol{\theta}$), with initial and final elevations equal.

$$\frac{-v_o^2 \sin(2\theta)}{g}$$

Formula for maximum vertical distance ($\mathbf{d_{VMax}}$) given initial velocity ($\mathbf{v_o}$) and launch angle ($\boldsymbol{\theta}$), with initial and final elevations equal.

$$\frac{-v_o^2 \sin^2\theta}{2g}$$

Formula for launch angle (θ) given maximum vertical distance ($\mathbf{d_{VMax}}$) and maximum horizontal distance ($\mathbf{d_{HMax}}$) with initial and final elevations equal.

$$\tan\theta = \frac{d_{V_{max}}}{d_{h_{max}}}$$

Formula for any vertical distance (**dv**) with initial and final elevations not equal given initial vertical distance ($\mathbf{d_{vo}}$), initial velocity ($\mathbf{v_o}$), launch angle (θ) and final time (**t**)

$$d_v = d_{vo} + v_o t \sin\theta + \frac{1}{2} g t^2$$

Formula for time of flight (t_{of}) if initial and final elevations are equal and given initial velocity (v_o) and launch angle (θ)

$$t_{of} = \frac{-2v_o \sin\theta}{g}$$

Formula for time of flight (t_{of}) if initial and final elevations are not equal and given initial velocity (v_o) and launch angle (θ)

$$t_{of} = \frac{d_{h_{max}}}{v_o \cos\theta}$$

Formula for amount of simple interest (**A**) given the principal (**P**), the number of invested periods (**n**) and interest rate (**i**) (per period)

$$A = P(1 + i)^n$$

Formula for amount of compound interest (**A**) given the principal (**P**), the number of invested periods (**n**) and interest rate (**i**) (per period), compounded (**q**) times per period

$$A = P(1 + i/q)^{nq}$$

Formula for amount of continous compound interest (**A**) given the principal (**P**), the interest rate (**r**) and time (**t**).

$$\mathbf{A = Pe^{rt}}$$

Formula for the percent difference/change between quantities **A** and **B** where the first mentioned quantity (**A**) is the basis for comparison

$$(100)\left[\frac{B}{A} - 1\right]$$

Formula for the percent error between an exact quantity (**E**) and an approximate quantity (**A**)

$$(100)\left[\frac{A}{E}-1\right]$$

Formula for the percent increase between a small quantity (**S**) and larger quantity (**L**)

$$(100)\left[\frac{L}{S}-1\right]$$

Formula for the percent decrease between a small quantity (**S**) and larger quantity (**L**)

$$(100)\left[1 - \frac{S}{L}\right]$$