Carpenter Level 1 (2025) Formula Sheet

Note: This formula sheet is provided as a resource. The sheet may not include all necessary formulas and may contain formulas not required for this exam. Apprentices must apply the formulas to demonstrate their understanding.

Measurement unit abbreviations

Constants

$\pi=3.14$	

Formulas

Number	Description	Full Formula	Abbreviated
1.	Safe Working Load = diameter of wire rope x 8 (safety factor)	SWL = diameter x 8	SWL = d x 8
2.	Pythagorean Theorem	$A^2 \times B^2 = C^2$	$A^2 \times B^2 = C^2$
3.	Surface area of rectangle / square	SA = length x width	SA = L x W
4.	Volume of a cylinder	$V = \pi r^2 \times$ height	$V = \pi r^2 \times h$
5.	Volume of rectangle / square	V = length x width x height	V = L x W x H
6.	Volume of a trapezoid prism	$V = 1/2 \times (a+b) \times$ height $\times$ length	$V = 1/2 \times (a+b) \times h \times l$
7.	Area of a trapezoid	$A = 1/2 \times (a+b) \times$ height	$V = 1/2 \times (a+b) \times h$
8.	Area	Length $\times$ width	l x w
9.	Area of a circle	$\pi \times$ radius^2	$\pi \times r^2$
10.	Area of a triangle	$\dfrac{(\text{base} \times \text{height})}{2}$	$\dfrac{b \times h}{2}$
11.	Circumference of a circle	$\pi \times$ diameter	$\pi \times D$
12.	Total run of a rafter	$\dfrac{(\text{total span})}{2}$	
13.	Total rise of a rafter	$\dfrac{\text{Total run}}{\text{Unit of run}} \times$ Unit rise	