

# Trades Math Resources



## Formulas for the Trades Poster

26" x 39" trades math wall poster featuring examples with steps to solve area, volume, and right-angle triangle problems

Formulas for perimeter, area, volume, 3-4-5 method, and trigonometry

\$9 each  
or \$7.20 each for 5+

**FORMULAS for the TRADES**

Developing Workforce Skills  
skillplan.ca

	AREA			VOLUME			RIGHT-ANGLE TRIANGLES		
<b>STEP 1: READ THE PROBLEM</b>	Calculate the area of the worksheet roof.	Calculate the area of the playground.	Calculate the area of the parking lot and driveway.	Calculate the volume of concrete needed for the floor slab.	Calculate the volume of concrete needed for the concrete pipe.	Calculate the volume of concrete needed to make the wall panel.	Calculate the length of the string (diagonal).	Calculate the total rise (height) of the stairs.	Calculate the total run (length) of the stairs.
<b>STEP 2: DRAW AND LABEL A DIAGRAM</b>									
<b>STEP 3: WRITE THE FORMULA</b>	$A = L \times W$	$A = \pi r^2$	$A = L \times W$	$V = L \times W \times H$	$V = \pi r^2 \times H$	$V = L \times W \times H$	$a^2 + b^2 = c^2$	$r^2 = \frac{\text{total rise}}{\text{height of the stairs}}$	$r^2 = \frac{\text{total run}}{\text{length of the stairs}}$
<b>STEP 4: CALCULATE THE ANSWER</b>	$A = 100 \times 500 = 50,000 \text{ ft}^2$	$A = \pi \times 60^2 = 113,097 \text{ ft}^2$ (rounded off to two decimal places)	$A_{\text{lot}} = 100 \times 200 = 20,000 \text{ ft}^2$ $A_{\text{driv}} = 60 \times 50 = 3,000 \text{ ft}^2$ Total Area = $20,000 \text{ ft}^2 + 3,000 \text{ ft}^2 = 23,000 \text{ ft}^2$	$V = 100 \times 50 \times 6 \times 0.5 = 1,500 \text{ ft}^3$	$V = \pi \times (2.5)^2 \times 6 = 62.83 \text{ ft}^3$	Volume of wall panel = $20' \times 6.0' \times 20' = 2400 \text{ ft}^3$ Volume of window = $(10' \times 5.0' \times 5') = 250 \text{ ft}^3$ Total volume of concrete = $2400 \text{ ft}^3 - 250 \text{ ft}^3 = 2150 \text{ ft}^3$	$c^2 = 10^2 + 12^2 = 144 + 144 = 288$ $c = \sqrt{288} = 16.97$	$r^2 = \frac{144}{16.97} = 8.48$ $r = 2.91$	$r^2 = \frac{144}{11.00} = 13.09$ $r = 3.62$

  

FORMULAS			
<b>Perimeter 1-D</b>  $P = 2L + 2W$  $P = a + b + c$  $P = 2a + 2b$  $P = 6s$	<b>Area 2-D</b>  $A = L \times W$  $A = \frac{1}{2}bh$  $A = \frac{1}{2}(a+b)h$  $A = \pi r^2$  $A = 2\pi rh$	<b>Volume 3-D</b>  $V = L \times W \times H$  $V = \pi r^2 \times H$  $V = \frac{1}{3}\pi r^2 \times H$  $V = \frac{4}{3}\pi r^3$	<b>3-4-5 Method</b>  $a^2 + b^2 = c^2$ $9 + 16 = 25$ $3^2 + 4^2 = 5^2$ <b>Trigonometry</b>  30°    45°    60°

**Numeracy Rules Pocket Guide**

**Measure**

**Convert**

**Weight Load Estimation**

Material	Imperial	Metric
Steel	490 lb/ft <sup>3</sup>	7850 kg/m <sup>3</sup>
Concrete	150 lb/ft <sup>3</sup>	2400 kg/m <sup>3</sup>
Aluminum	165 lb/ft <sup>3</sup>	2600 kg/m <sup>3</sup>
Steel Plate	40 lb/ft <sup>2</sup> (1" thick)	7.85 kg/m <sup>2</sup> (1 mm thick)
Water (Fresh)	8.3 lbs/US gal	1000 kg/m <sup>3</sup>

## Numeracy Rules Pocket Guide

Quick reference to math conversions and formulas such as imperial, metric, weight load estimation, 3-4-5 method, trigonometry, perimeter, area, volume, decimals of a foot, converting fractions to decimals, decimals to fractions of an inch

Built-in metric and imperial ruler

3.5" x 4.25" when folded

\$1.25 each