



Foolproof Octagon Layout

by Harvey Edwards

Whether you're building a concrete patio, a deck, or an elegant pergola, if it's in the shape of an octagon, the layout will be more challenging than for a rectangular structure. But there's no reason to fear the trigonometry; instead,

follow this process using these three multipliers to help lay out the sides. ❖

A former builder, Harvey Edwards currently works as a theater set carpenter in Loami, Ill.

Multiplier #1 = 1.4142

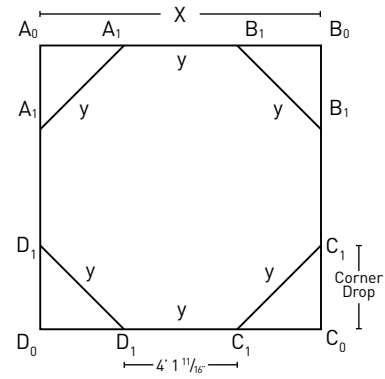
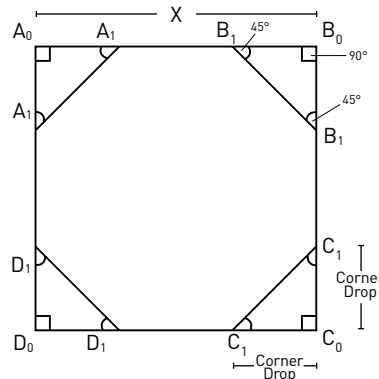
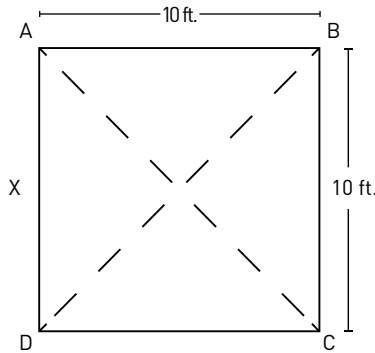
diagonal (AC, BD) = side X x 1.4142
 = 10 x 1.4142
 = 14.142
 or 14 ft. 1 11/16 in.

Multiplier #2 = 0.2929

A₀ - A₁ = side X x 0.2929
 = 10 x 0.2929
 = 2.929
 or 2 ft. 11 1/8 in.

Multiplier #3 = 0.4142

side of octagon (y) = side X x 0.4142
 = 10 x 0.4142
 = 4.142
 or 4 ft. 1 11/16 in.



1. Stake out the corners of the square footprint of the octagon with batter boards and string lines where it will be located. To check for square, measure the diagonals (AC and BD). The length of a diagonal equals the length of a side of the square multiplied by 1.4142.

2. To find the corner drop (the distance from the corner of the square A₀ to the octagon corner A₁), multiply the length of side X by 0.2929.

3. When staking out the eight corners of the octagon, multiply the length of side X by 0.4142 to verify that each side of the octagon is equally sized and the corners are properly located.

Send Us Your Tips

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