



Irrigation ASSOCIATION CERTIFICATION PROGRAM

Landscape/Turf Specialty Residential Examination Equations

Basic and non-irrigation equations and conversions are assumed to be known by candidates. POI refers to Principles of Irrigation, 3rd ed. Irrigation Association. TIM refers to Turf Irrigation Manual, Choate. Weathermatic. The equations are presented in the latest IA format and may appear different from those presented in the reference material.

1 cubic foot of water = 7.48 gallons

1 acre-inch = 27,154 gallons

1 acre-foot = 325,848 gallons

$PR = \frac{96.3 \times Q}{A}$	<u>Various A values</u> $A = S_r \times S_s$ $A = 0.866 \times S_s^2$ $A = 0.8 \times D_t \times S_s$	POI 3-2, 3-4, 3-5
$RT = 60 \times \frac{IR_{gross}}{PR}$		POI 5-5
$Q = A \times V$		POI 8-2
$V = \frac{0.408 \times Q}{ID^2}$		POI 8-3
$NPSHa = H_a - H_s - H_f - H_{vp}$		POI 9-1
$Whp = \frac{Q \times H}{3,960}$		POI 9-2
$Bhp = \frac{Q \times H}{3,960 \times (E_p / 100)}$		POI 9-3 similar
$V = I \times R$		POI 10-1
$IWR = \frac{\text{Plant water requirement}}{DU}$		TIM p. 163 similar