Irrigation ASSOCIATION CERTIFICATION PROGRAM
Certified Golf Irrigation Auditor Examination Equations

Basic and non-irrigation equations and conversions are assumed to be known by candidates. GIA refers to the Irrigation Association Golf Irrigation Auditor Manual, revised March 2010. 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

$PWR = K_c \times K_{mc} \times ET_o$	GIA Eq. 3-1 p. 46
$Q = 28.62 \times d^2 \times \sqrt{p}$	GIA Eq. 3-2 p. 59
$PR = \dfrac{96.3 \times Q}{A}$ $\quad$ Various A values $\\A = S_1 \times S_2$ $\\A = 0.866 \times S^2$ $\\A = 0.8 \times D_t \times S$	GIA Eq. 3-4 p. 61
$PR_{net} = \dfrac{3.66 \times V_{avg}}{t_R \times A_{CD}}$	GIA Eq. 3-5 p. 61
$DU_{LQ} = \left(\dfrac{\text{Average Catch in Lower Quarter}}{\text{Average Catch Overall}} \right) \times 100$ $\\$ **DU may also be represented in a decimal.**	GIA Eq. 3-6 p. 62
$SC = \dfrac{\text{Average Catch Overall}}{\text{Average Catch in Critical Dry Area}}$	GIA Eq. 3-7 p. 63
$PAW = AW \times RZ$	GIA Eq. 3-9 p. 76
$AD = PAW \times (MAD / 100)$	GIA Eq. 3-10 p. 78
$RTM = \dfrac{1}{0.4 + (0.60 \text{ x } DU_{LQ})}$	GIA Eq. 3-11 p. 82
$RT = 60 \times \dfrac{IR_{gross}}{PR}$	

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$RT_b = 60 \times \dfrac{PWR}{PR}$	GIA Eq. 3-12 p. 84
$RT = RT_b \times RTM$	GIA Eq. 3-13 p. 84
$CRT = 60 \times \dfrac{Basic\,intake\,rate}{PR}$	GIA Eq. 3-14 p. 85
$Irrigation\ Days = \dfrac{PWR}{AD}$	GIA Eq. 3-15 p. 87
$Minutes\ per\ irrigation\ day = \dfrac{RT}{Days}$	GIA Eq. 3-16 p. 87