

## التمرين الأول

$S_L, S_S$

$d_{noz}$

$P_{SP}$

$Q_{SP}$

$$Q_{sp} = 0.0011 \cdot d_{noz}^2 \cdot P_{sp}^{0.5}$$

$$\frac{Q_{sp}}{P_{sp}} = d_{noz}^2 \quad / \quad \frac{Q_{sp}}{D_w} = R_a$$

$$R_a = \frac{Q_{sp}}{S_s \times S_L}$$

$S_s$

$S_s$

$S_s$

$(S_L \geq S_s) \quad S_L$

$L_L$

$N_{SP}$

$S_s$

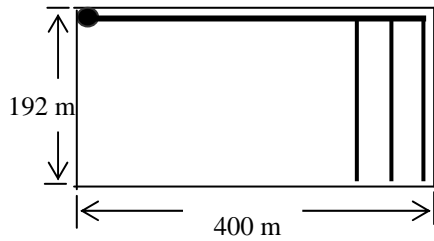
:  $S_L$  :

)  $N_L$  ( )  $S_L$   $S_S$   
  $N_{set}$  (

:  $R_a$  :

$$R_a \leq I_{Sb}$$

$$R_a = \frac{Q_{Sp}}{S_s \times S_L} :$$



$$Taw = 170 \text{ mm/m}$$

$$Drz = 50 - 90 \text{ cm} = 70 \text{ cm}$$

$$Taw = Taw_{1m} \times Drz(m)$$

$$Taw = 170 \times 0.70 = 119 \text{ mm}$$

$$Mad = 50\%$$

$$Dn = Mad \times Taw$$

$$Dn = 0.50 \times 119 = 59.5 \text{ mm}$$

:ETc

$$ET_c = 6.1 \text{ mm/day}$$

$$\Pi = \frac{Dn}{ET_c} = \frac{59.5}{6.1} = 9.75 = 10 \text{ day}$$

$$Dn = \Pi \times ET_c = 10 \times 6.1 = 61 \text{ mm}$$

$$Mad = \frac{Dn}{Taw} = \frac{61}{119} \times 100 = 52.6\%$$

$$Ea = 75\%$$

$$D_g = \frac{Dn}{E_a} = \frac{61}{0.75} = 81.33 \text{ mm}$$

: S<sub>s</sub>

S<sub>s</sub>

S <sub>s</sub> (m)	9	12	18
N <sub>sp</sub>	21.33	16	10.66
L irrigation (m)	189	192	180

$$\therefore S_s = 12 \text{ m}$$

$$\therefore S_L = 12 \text{ m or } 15 \text{ m or } 18 \text{ m}$$

: S<sub>L</sub>

S<sub>L</sub>

S <sub>L</sub> (m)	12	15	18
NL	33.33	26.66	22.22
L irrigation (m)	396	390	396

$$\therefore S_L = 12 \text{ m or } 18 \text{ m}$$

$$\therefore S_s = 12 \text{ m} \quad \therefore S_L = 18 \text{ m}$$

: :

$$\left( \right) ( , - , ) / \quad \left( \right) /$$
$$: \quad \left( \right) \times$$

$$d_{\text{nozzle}}(\text{mm}) = 5.16$$

$$P_{\text{sp}}(\text{kg/cm}^2) = 3.87$$

$$Q_{\text{sp}}(\text{m}^3/\text{hr}) = 1.98$$

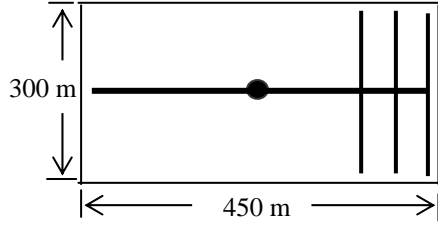
$$D_w(\text{m}) = 31.71$$

$$C_u(\%) = 84$$

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$$R_a = \frac{Q_{\text{sp}}}{S_s \times S_L} = \frac{1.98}{12 \times 18} = 9.2 \text{ mm/hr}$$

مثال ٢:



بطاطس مزروع في تربة رملية معدل التسرب لها ١١ مم/ساعة ، في منطقة ذات مناخ صحراوي ، وسرعة الرياح السائدة ٧ كم/ساعة .

: ( )

$$Taw = 80 \text{ mm/m}$$

:( ) ( )

$$Drz = 60 - 90 \text{ cm} = 75 \text{ cm}$$

$$Taw = Taw_{lm} \times Drz(m)$$

$$Taw = 80 \times 0.75 = 60 \text{ mm}$$

:

$$Mad = 50\%$$

$$Dn = Mad \times Taw$$

$$Dn = 0.50 \times 60 = 30 \text{ mm}$$

( ) ( ) ( )

: ETc

$$ET_c = 8.1 \text{ mm/day}$$

$$\Pi = \frac{D_n}{ET_c} = \frac{30}{8.1} = 3.7 = 4 \text{ day}$$

( )

$$Dn = \Pi \times ETc = 4 \times 8.1 = 32.4 \text{ mm}$$

$$Mad = \frac{Dn}{Taw} = \frac{32.4}{60} \times 100 = 54\%$$

: Ea ( ) ( )

$$Ea = 65\%$$

Dg

$$D_g = \frac{D_n}{E_a} = \frac{32.4}{0.65} = 49.85 \text{ mm}$$

: S<sub>s</sub>

S<sub>s</sub>

S <sub>s</sub> (m)	9	12	18
N <sub>sp</sub>	16.66	12.5	8.33
L irrigation (m)	144 or 148.5	150	144

$$\therefore S_s = 12 \text{ m}$$

$$\therefore S_L = 12 \text{ m or } 15 \text{ m or } 18 \text{ m}$$

: S<sub>L</sub>

S<sub>L</sub>

S <sub>L</sub> (m)	12	15	18
NL	37.5	30	25
L irrigation (m)	444	450	450

$$\therefore S_L = 15 \text{ m or } 18 \text{ m}$$

$$\therefore S_s = 12 \text{ m} \quad \therefore S_L = 15 \text{ m}$$

: :

$$\left( \quad \right) \left( \quad , \quad - \quad , \quad \right) / \quad \left( \quad \right) \quad /$$

$$: \quad \left( \quad \right) \times$$

$$d_{\text{nozzle}}(\text{mm}) = 4.76 \cdot 2.38$$

$$P_{\text{sp}} (\text{kg/cm}^2) = 2.81$$

$$Q_{\text{sp}} (\text{m}^3/\text{hr}) = 1.88$$

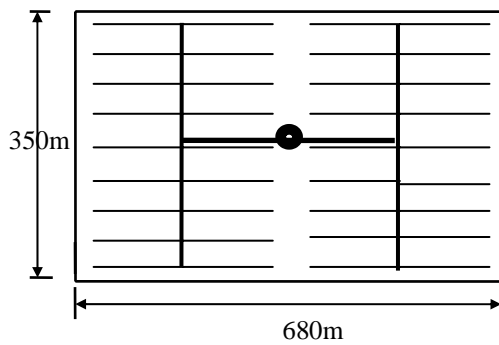
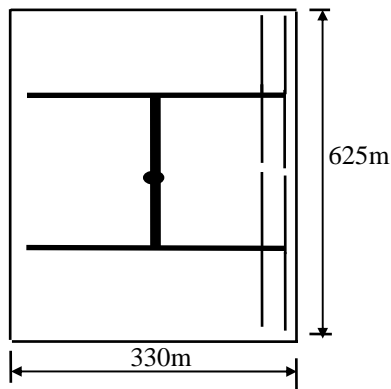
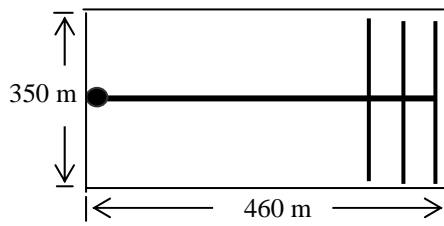
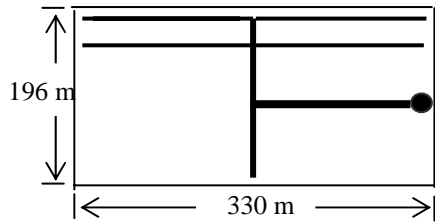
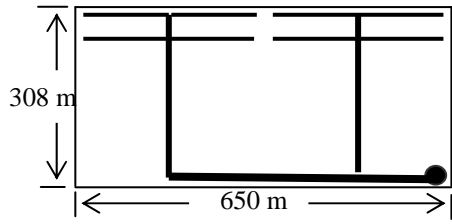
$$D_w (\text{m}) = 28.96$$

$$C_u (\%) = 89$$

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$$R_a = \frac{Q_{\text{sp}}}{S_s \times S_L} = \frac{1.88}{12 \times 15} = 10.4 \text{ mm/hr}$$

$$R_a \leq I_b$$



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 بازلا مزروع في تربة طينية طميية ، معدل  
 التسرب لها ٧ مم/ساعة ، في منطقة ذات مناخ  
 متوسط وسرعة الرياح السائدة ٥ كم/ساعة.