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Section: A

Assignment :- 4

Eng:- Amjad Islam

Date:- 13 July 2020

Date: _____

(2)

$$\sum^+ M_A = 0 \quad F_x(1) - B_y(15) - 45(7.5) = 0$$

FBD

$$\hookrightarrow M^+ C = 0 - F_x - B_y(30) + (45)(30) = 0$$

$$\boxed{F_x = 153.4} \quad B_y = 0$$

$$W_0 = \frac{2FH_y}{l^2} = 2 \frac{(153.4)(10)}{30^2}$$

$$= \frac{3068}{900} = 3.40$$

$$\boxed{100 = 3.40 \text{ K/ft}}$$

$$F_{\max} = W_0 l \sqrt{1 + \left(\frac{l}{2a}\right)^2}$$
$$= 3.4(30) \sqrt{1 + \left(\frac{30}{2(10)}\right)^2}$$

$$\boxed{F_{\max} = 183.6 \text{ K}}$$

(3)

Each hanger carries
5 ft of wv

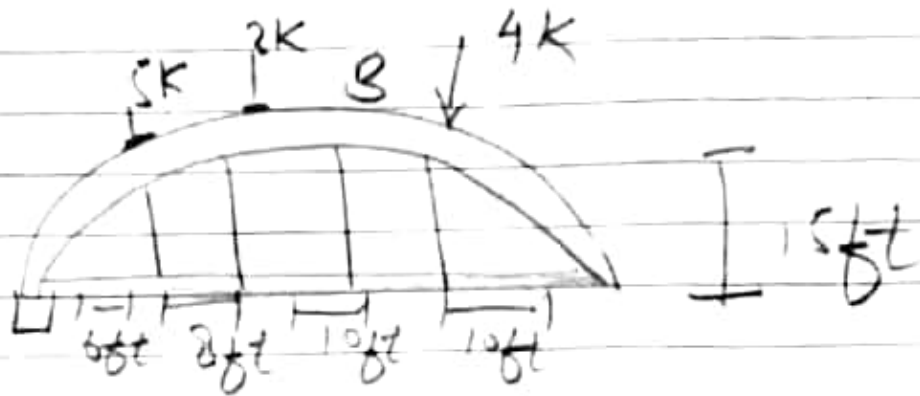
$$T = (5 \text{ ft}) (3.4 \text{ k/ft})$$

$T = 17 \text{ k}$ Ans.

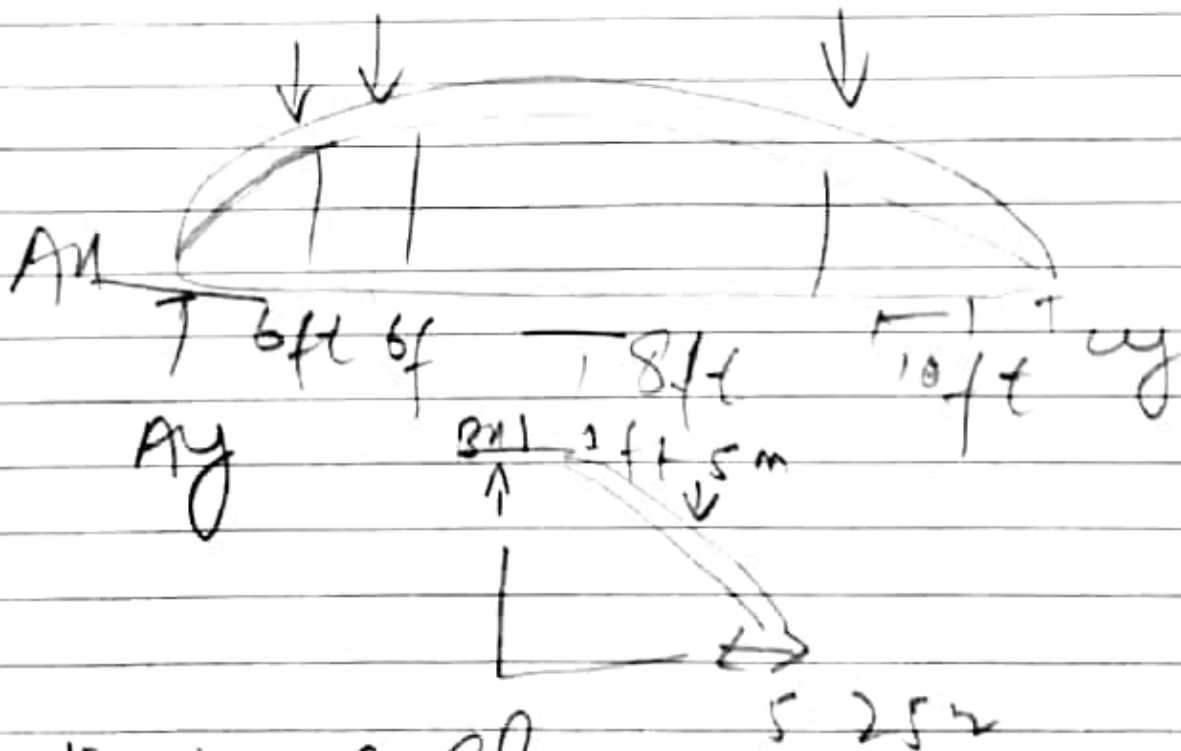
Date _____

(4)

Q No = 2



Solution:



Entire arch.

(5)

↳

$$\sum F_y = 0$$

$$A_y + 5 \cdot 25 - 4 - 3 - 5 = 0$$

$$A_y = 6.75 \text{ k}$$

$$\sum F_x = 0 \quad A_x = 0$$

Section BC =

↳

$$\sum M_B = 0$$

$$-5(10) - T(15) + 5 \cdot 25(20) = 0$$

$$T = 3.672$$