

at Part ④

$$\sum X = 0$$

$$\Rightarrow X_3 = 0$$

at Part ③

$$\sum X = 0$$

$$X_3 + X_2 = 0 \Rightarrow X_2 = 0$$

at Part ②

$$\sum X = 0$$

$$X_1 + 5 + 0 = 0 \Rightarrow X_1 = -5$$

at Part ①

$$\sum X = 0$$

$$X_A + 5 = 0 \Rightarrow X_A = -5T$$

ترتيب الحل من فوق ل تحت

على حسب القدره على العمل

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* Part ②

$$\sum M / Y_1 = 0$$

$$8(2) - Y_2(4) = 0 \Rightarrow Y_2 = 4T$$

$$\sum Y = 0$$

$$Y_1 + 4 - 8 = 0 \Rightarrow Y_1 = 4T$$

Part ①

$$\sum Y = 0$$

$$Y_A - 8 - 4 = 0 \Rightarrow Y_A = 12T$$

$$\sum M_A$$

$$M_A - 8(2) - 4(4) = 0 \Rightarrow 32mT$$

Part ③

$$\sum M / Y_3$$

$$12(2) - Y_B(4) + 4(6) = 0 \Rightarrow Y_B = 12T$$

$$\sum Y = 0$$

$$12 - 12 - 4 + Y_3 = 0 \Rightarrow Y_3 = 4T$$

Part 4

$$M_D = 0$$

$$12(2) - Y_C(6) + 4(8) + 6(8) = 0$$

$$Y_C = 17.33 T$$

$$\sum Y = 0$$

$$17.33 - 4 + Y_D - 6 - 12 = 0$$

$$Y_D = 4.67 T$$

Link Members

$$\sum M_B$$

$$32(4) - 4(4) + 8(10) - R_1(8) = 0$$

$$R_1 = 24 T$$

$$\sum M_C$$

$$6(3) + R_2 \sin \theta (8) + 24(12) - 32(8) - 8(14) = 0$$

$$R_2 \sin \theta = 7.75 T \Rightarrow R_2 \frac{3}{5} = 7.75 T$$

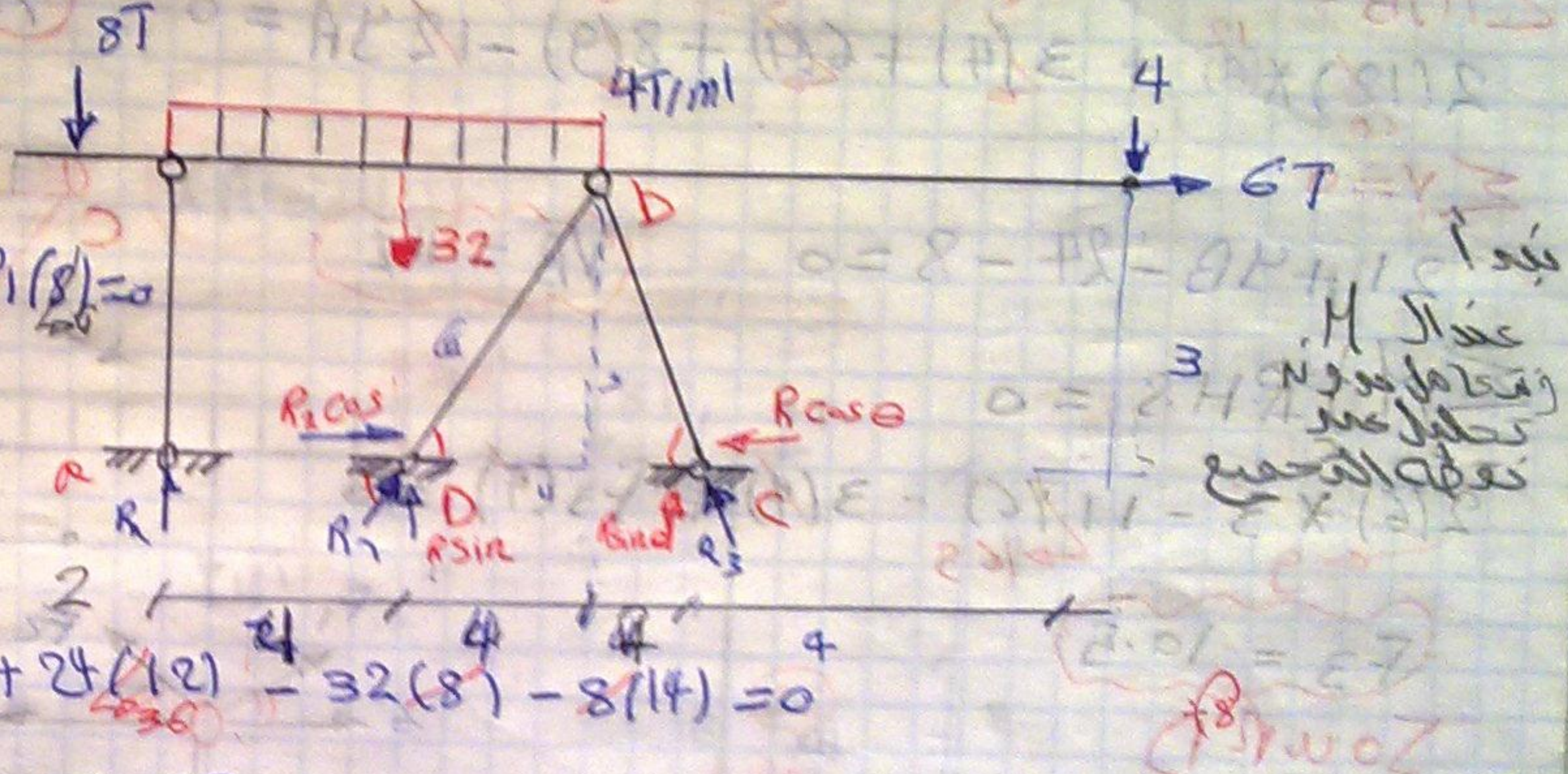
$$R_2 = 12.91 T$$

$$\sum X = 0$$

$$12.91 \cos \theta - R_3 \cos \theta + 6 = 0$$

$$12.91 \left(\frac{4}{5} \right) - R_3 \frac{4}{5} + 6 = 0$$

$$R_3 = 20.41 T$$



$$\sum X = 0$$

$$X = 2 T$$

$$\sum M_B = 0$$

$$-8(3) + 16(4) - R_1(8) + 4(10) - 2(4) = 0$$

$$R_1 = 9 T$$

$$\sum Y = 0$$

$$9 - 4 - 16 - 8 + Y = 0 \Rightarrow Y = 19 T$$

Joint A



$$F_1 + 9 = 0$$

$$F_1 = -9$$

at Joint B

$$F_2 \sin \theta + F_3 \sin \theta + 19 = 0$$

$$\sum Y = 0$$

$$F_2 \cos \theta + 2 - F_3 \cos \theta = 0 \rightarrow \text{C}$$

$$\sum X = 0$$

