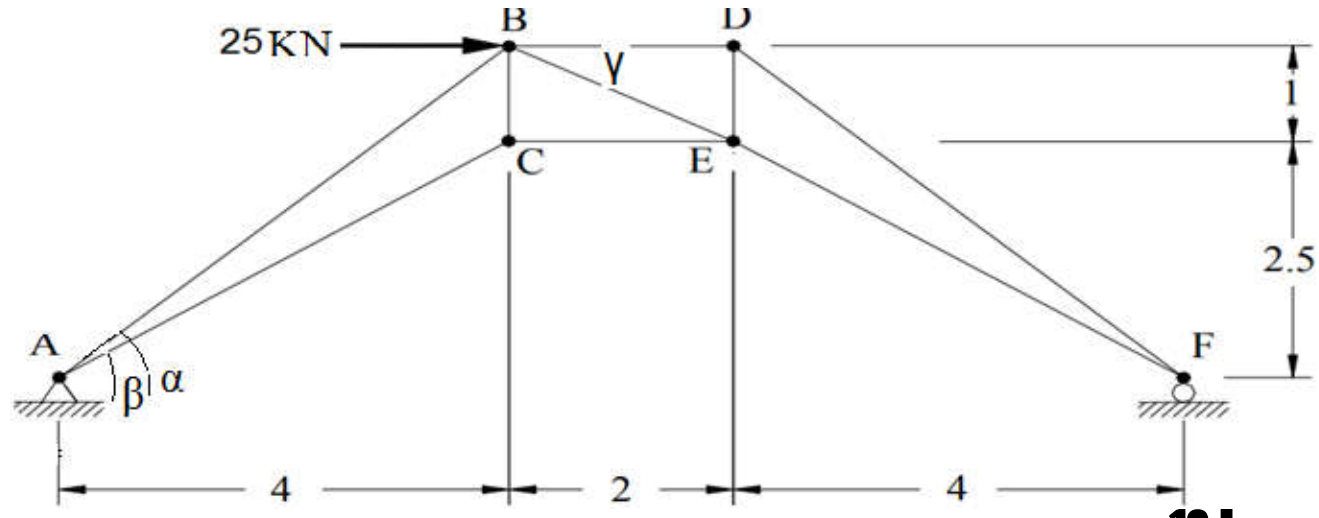
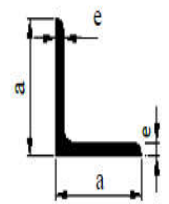


3*0b+, {D-zD+,
 $\sqrt{3} \cdot W / 3 \cdot R$

zV/C 1S1' ty 01v, ±S31">9. B+, A0, z, R0, x:-+i-f, {A±zD
 CBI'RS C B I'RS C
 J L 3i-^S4-0>S± 2-0 x:-+i-f, hQ" 3fA@s



المجنب L	الأبعاد		المقطع (cm ²)
	a (mm)	e (mm)	
(20x20x3)	20	3	1.12
(25x25x3)	25	3	1.42
(30x30x3)	30	3	1.74
(40x40x4)	40	4	3.08
(50x50x5)	50	5	4.80
(60x60x6)	60	6	6.91



الجدول العرفي

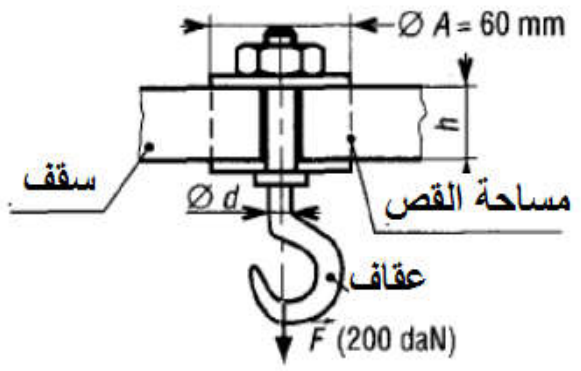
D-zQHBS; f, R±SvwB5.Δ
 C±, J±AER, b|j q, HHL1 RA. X
 .E

A0, z, R0, x:-+i-f, γ, β, α 1 RA. "
 I = b · F

I = b · F, [F]^a 9, D-0S, [5vj] / 3Z0, R0v, bBE, I, H, 1 RA,
 C' / @ "R, z; IB, H, R7 "i J, i N, kbv, 3ARS 1 RA, a 9 (DB518, k) 1 Dv, ? 60 Q v

$\sigma = 1440 \text{ daN/cm}^2$

$Q = 1 \cdot HA^2 \cdot \dots$, $I = \pm S \cdot \dots$



H zV, bC 1S1' ty "B+, 1 Dv, ±zD
 2v \ Ns Q "Q, J s vQ b7 0Sp-vi
 x' s vR, -1Sh' z+, 2+; z; IB, H, R, y, Δ
 3' bQ @CbQhr, Q "R, 1 RA, Δ / C
 Δ, 30-vj, bIV, / @ "R, H, R, y, X
 ΔM, HA

A | 1 A -] & b, % Q

1KN = ... Kgf = ... daN = ... N , 1tf = ... Kgf , 10Kgf/cm² = ... N/mm² = ... MPa

3D IS 301° 2H-
 :-9 3° 201° 24
 × 4 4 3 4 3

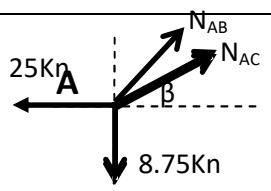
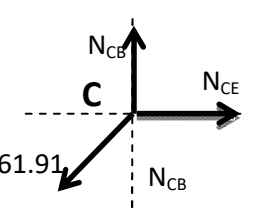
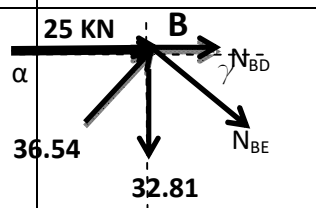
L-06E[®]

3D=J1°
 10S 3/3A=4
 AEM 1/2/200

3rb, 3D, . . RB, jr, HL²->5S zi ±RA±S1}Q jr, HL@yJ, 三カ三カ, 三カ三カ [カマ ♣ |-jq@, HL >RA

$\tan \alpha = \frac{3.5}{4} = 0.875$ $\tan \beta = \frac{2.5}{4} = 0.625$ $\tan \gamma = \frac{1}{2} = 0.5$

$\alpha = 41.186^\circ$ $\beta = 32^\circ$ $\gamma = 26.57^\circ$
 $\cos \alpha = 0.753$ $\cos \beta = 0.848$ $\cos \gamma = 0.894$
 $\sin \alpha = 0.658$ $\sin \beta = 0.53$ $\sin \gamma = 0.447$

2Ivj}, A	2Ivj}, zU	$\sum F_{/X} = 0$	الجهد والطبيعة
 <p> $\cos \alpha = 0.753$ $\sin \alpha = 0.658$ $\cos \beta = 0.848$ $\sin \beta = 0.53$ </p>	$N_{AB} \cos \alpha + N_{AC} \cdot \cos \beta = 25$ $0.848 N_{AB} + 0.753 N_{AC} = 25$	$N_{AB} \sin \alpha + N_{AC} \cdot \sin \beta = 8.75$ $0.53 N_{AB} + 0.658 N_{AC} = 8.75$	$N_{AC} = 62.06 \text{ KN (IU)}$ $N_{AB} = 36.69 \text{ KN (T)}$
 <p> $\cos \beta = 0.848$ $\sin \beta = 0.53$ </p>	$-61.91 \cdot \cos \beta + N_{CE} = 0$ $N_{CE} = 52.62 \text{ KN}$	$-61.91 \sin \beta + N_{CB} = 0$ $N_{CB} = 32.89 \text{ KN}$	$N_{CE} = 52.62 \text{ KN (IU)}$ $N_{CB} = 32.89 \text{ KN (IU)}$
 <p> $\cos \gamma = 0.894$ $\sin \gamma = 0.447$ </p>	$25 + N_{BD} + 36.54 \cdot 0.753 + N_{BE} \cdot 0.894 = 0$ $N_{BD} + N_{BE} \cdot 0.894 = -52.51$ $N_{BD} = -34.81 \text{ KN}$	$-32.81 - N_{BE} \cdot \sin \gamma = 0$ $N_{BE} \cdot \sin \gamma = -32.89$ $N_{BE} = -19.79 \text{ KN}$	$N_{BD} = -34.81 \text{ KN (T)}$ $N_{BE} = -19.79 \text{ KN (T)}$

♣-°00" 3~
 1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

$$\begin{cases} \Delta x_{AD} = l_{AD} \cdot \sin G_{AD} = 500 \cdot \sin 81.256 = 478.5 \text{ m} \\ \Delta y_{AD} = l_{AD} \cdot \cos G_{AD} = 500 \cdot \cos 81.256 = 145 \text{ m} \end{cases}$$

$$\begin{cases} x_D = x_A + \Delta x_{AD} = 0 + 478.5 = 478.5 \text{ m} \\ y_D = y_A + \Delta y_{AD} = 400 + 145 = 545 \text{ m} \end{cases}$$

$$\begin{cases} \Delta x_{AB} = x_B - x_A = 300 > 0 \\ \Delta y_{AB} = y_B - y_A = -400 < 0 \end{cases}$$

$$l_{AB} = \sqrt{300^2 + 400^2} = 500$$

$$G_{AB} = \arctan\left(\frac{400}{300}\right) = 56.31^\circ$$

$$G_{DC} = G_{AB} = 56.31^\circ$$

$$\begin{cases} \Delta x_{DC} = l_{DC} \cdot \sin G_{DC} = 500 \cdot \sin 159.03 = 300 \text{ m} \\ \Delta y_{DC} = l_{DC} \cdot \cos G_{DC} = 500 \cdot \cos 159.03 = -400 \text{ m} \end{cases}$$

$$\begin{cases} x_C = x_D + \Delta x_{DC} = 478.5 + 300 = 778.5 \text{ m} \\ y_C = y_D + \Delta y_{DC} = 545 - 400 = 145 \text{ m} \end{cases}$$

♣ H | I > , (b) 300 (?) 8, 9

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ユム 1000000 / 1000000 = 1000000

$$S \geq \frac{N_{AC}}{\sigma} = \frac{6191}{1440} = 4.3 \text{ cm}^2$$

$$S_{RA} = \frac{S}{2} = 2.15 \text{ cm}^2$$

3, 1, bQ, 2, 0Q, hR, 2Q

$$S = \pi \cdot A \cdot h = 3.14 \cdot 60 \cdot h = 188 \text{ h}$$

$$S = F / \sigma = (200 \cdot 10) / 1 = 2000 \text{ mm} \dots$$

$$h = \frac{2000}{188} = 10.6 \text{ mm}$$

$$S \geq \frac{F}{\sigma} = \frac{200 \cdot 10}{100} = 20 \text{ mm}$$

$$d \geq \sqrt{\frac{4S}{\pi}} = \sqrt{\frac{4 \times 20}{3.14}} = 5.04 \text{ mm}$$

$$1 \text{ KN} = 10^2 \text{ Kgf} = 10^2 \text{ daN} = 10^3 \text{ N} \quad 1 \text{ tf} = 10^3 \text{ Kgf}$$

$$\frac{10 \text{ Kgf}}{\text{cm}^2} = \frac{1 \text{ N}}{\text{mm}^2} = 1 \text{ MPa}$$

34.-v}, 4-D9,1A7/ 3A-RS E-RA

[-:], 543006,

L,I=	3a⊙/ ĐzV5	N-i	3"Đv,i 3A+Đ/	3q-B},
	3ĐJL⊙, Đ†,	3/1aM}L,MA		

0.25*8

0.50

$$S = \frac{1}{2} \sum X_n \cdot (Y_{n-1} - Y_{n+1})$$

$$S = \frac{1}{2} [X_A(Y_B - Y_D) + X_B(Y_C - Y_A) + X_C(Y_D - Y_B) + X_D(Y_A - Y_C)]$$

$$S = \frac{1}{2} [0(0 - 145) + 300(145 - 400) + 778.5(545 - 0) + 478.5(400 - 145)]$$

0.5

8 3430

0.5

3jbv}, MqS yH 1ĐZ̄ . .

$$S_1 = \frac{1}{2} S = \frac{234900}{2} = 117450 \text{ m}^2$$

$$S_{MDC} = S_2 = \frac{1}{3} S = \frac{234900}{3} = 78300 \text{ m}^2$$

$$S_{BMC} = S_3 = \frac{1}{6} S = \frac{234900}{6} = 39150 \text{ m}^2$$

0.50
0.50
0.50

3bv°, 4-Đ9RA&

$$S_{MDC} = \frac{1}{2} [X_M(Y_C - Y_D) + X_D(Y_M - Y_C) + X_C(Y_D - Y_M)]$$

$$78300 = \frac{1}{2} [X_M(145 - 545) + 478.5(Y_M - 145) + 778.5(545 - Y_M)]$$

→ c ĐC, (j) Ij/

$$400 X_M + 300 Y_M = 198300 \quad \Delta$$

$$S_{BMC} = \frac{1}{2} [X_B(Y_C - Y_M) + X_M(Y_B - Y_C) + X_C(Y_M - Y_B)]$$

$$39150 = \frac{1}{2} [300(145 - Y_M) + X_M(0 - 145) + 778.5(Y_M - 0)]$$

I> c ĐC, (j) Ij/

$$-145 X_M + 478.5 Y_M = 34800$$

0.50

I> 2 30Q-B}, 3A, 6} 115Q-/ 3~

√ E7E