

۱۹۵۷

۴ ذی القعدة ۱۴۴۳

پستامراخانی تکلیف شماره ۶ کلاس : پنجشنبه

الف ۱
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$$\begin{array}{r}
 x+4 \\
 \hline
 4x^3 - 2x^2 + 31x - 15 \\
 \hline
 4x^3 - 20x^2 + 31x - 15 \quad | \quad x-1 \\
 \hline
 18x^2 - 19x + 15 = 1 \\
 \hline
 -19x^2 + 31x - 15 \\
 \hline
 -19x^2 + 19x \\
 \hline
 12x - 15 \\
 \hline
 12x - 15 \\
 \hline
 0
 \end{array}$$

$$\begin{array}{l}
 (2x-5)(2x-3) \\
 \Rightarrow (x-\frac{5}{2})(x-\frac{3}{2})
 \end{array}$$

$$\begin{array}{c}
 x+4 \rightarrow -4 \\
 (x-\frac{5}{2})(x-\frac{3}{2})(x-1) \\
 1, 5, 9, 13, 17, 21, 25, 29, 33, 37, 41, 45, 49, 53, 57, 61, 65, 69, 73, 77, 81, 85, 89, 93, 97, 101, 105, 109, 113, 117, 121, 125, 129, 133, 137, 141, 145, 149, 153, 157, 161, 165, 169, 173, 177, 181, 185, 189, 193, 197, 201, 205, 209, 213, 217, 221, 225, 229, 233, 237, 241, 245, 249, 253, 257, 261, 265, 269, 273, 277, 281, 285, 289, 293, 297, 301, 305, 309, 313, 317, 321, 325, 329, 333, 337, 341, 345, 349, 353, 357, 361, 365, 369, 373, 377, 381, 385, 389, 393, 397, 401, 405, 409, 413, 417, 421, 425, 429, 433, 437, 441, 445, 449, 453, 457, 461, 465, 469, 473, 477, 481, 485, 489, 493, 497, 501, 505, 509, 513, 517, 521, 525, 529, 533, 537, 541, 545, 549, 553, 557, 561, 565, 569, 573, 577, 581, 585, 589, 593, 597, 601, 605, 609, 613, 617, 621, 625, 629, 633, 637, 641, 645, 649, 653, 657, 661, 665, 669, 673, 677, 681, 685, 689, 693, 697, 701, 705, 709, 713, 717, 721, 725, 729, 733, 737, 741, 745, 749, 753, 757, 761, 765, 769, 773, 777, 781, 785, 789, 793, 797, 801, 805, 809, 813, 817, 821, 825, 829, 833, 837, 841, 845, 849, 853, 857, 861, 865, 869, 873, 877, 881, 885, 889, 893, 897, 901, 905, 909, 913, 917, 921, 925, 929, 933, 937, 941, 945, 949, 953, 957, 961, 965, 969, 973, 977, 981, 985, 989, 993, 997, 1001, 1005, 1009, 1013, 1017, 1021, 1025, 1029, 1033, 1037, 1041, 1045, 1049, 1053, 1057, 1061, 1065, 1069, 1073, 1077, 1081, 1085, 1089, 1093, 1097, 1101, 1105, 1109, 1113, 1117, 1121, 1125, 1129, 1133, 1137, 1141, 1145, 1149, 1153, 1157, 1161, 1165, 1169, 1173, 1177, 1181, 1185, 1189, 1193, 1197, 1201, 1205, 1209, 1213, 1217, 1221, 1225, 1229, 1233, 1237, 1241, 1245, 1249, 1253, 1257, 1261, 1265, 1269, 1273, 1277, 1281, 1285, 1289, 1293, 1297, 1301, 1305, 1309, 1313, 1317, 1321, 1325, 1329, 1333, 1337, 1341, 1345, 1349, 1353, 1357, 1361, 1365, 1369, 1373, 1377, 1381, 1385, 1389, 1393, 1397, 1401, 1405, 1409, 1413, 1417, 1421, 1425, 1429, 1433, 1437, 1441, 1445, 1449, 1453, 1457, 1461, 1465, 1469, 1473, 1477, 1481, 1485, 1489, 1493, 1497, 1501, 1505, 1509, 1513, 1517, 1521, 1525, 1529, 1533, 1537, 1541, 1545, 1549, 1553, 1557, 1561, 1565, 1569, 1573, 1577, 1581, 1585, 1589, 1593, 1597, 1601, 1605, 1609, 1613, 1617, 1621, 1625, 1629, 1633, 1637, 1641, 1645, 1649, 1653, 1657, 1661, 1665, 1669, 1673, 1677, 1681, 1685, 1689, 1693, 1697, 1701, 1705, 1709, 1713, 1717, 1721, 1725, 1729, 1733, 1737, 1741, 1745, 1749, 1753, 1757, 1761, 1765, 1769, 1773, 1777, 1781, 1785, 1789, 1793, 1797, 1801, 1805, 1809, 1813, 1817, 1821, 1825, 1829, 1833, 1837, 1841, 1845, 1849, 1853, 1857, 1861, 1865, 1869, 1873, 1877, 1881, 1885, 1889, 1893, 1897, 1901, 1905, 1909, 1913, 1917, 1921, 1925, 1929, 1933, 1937, 1941, 1945, 1949, 1953, 1957, 1961, 1965, 1969, 1973, 1977, 1981, 1985, 1989, 1993, 1997, 2001, 2005, 2009, 2013, 2017, 2021, 2025, 2029, 2033, 2037, 2041, 2045, 2049, 2053, 2057, 2061, 2065, 2069, 2073, 2077, 2081, 2085, 2089, 2093, 2097, 2101, 2105, 2109, 2113, 2117, 2121, 2125, 2129, 2133, 2137, 2141, 2145, 2149, 2153, 2157, 2161, 2165, 2169, 2173, 2177, 2181, 2185, 2189, 2193, 2197, 2201, 2205, 2209, 2213, 2217, 2221, 2225, 2229, 2233, 2237, 2241, 2245, 2249, 2253, 2257, 2261, 2265, 2269, 2273, 2277, 2281, 2285, 2289, 2293, 2297, 2301, 2305, 2309, 2313, 2317, 2321, 2325, 2329, 2333, 2337, 2341, 2345, 2349, 2353, 2357, 2361, 2365, 2369, 2373, 2377, 2381, 2385, 2389, 2393, 2397, 2401, 2405, 2409, 2413, 2417, 2421, 2425, 2429, 2433, 2437, 2441, 2445, 2449, 2453, 2457, 2461, 2465, 2469, 2473, 2477, 2481, 2485, 2489, 2493, 2497, 2501, 2505, 2509, 2513, 2517, 2521, 2525, 2529, 2533, 2537, 2541, 2545, 2549, 2553, 2557, 2561, 2565, 2569, 2573, 2577, 2581, 2585, 2589, 2593, 2597, 2601, 2605, 2609, 2613, 2617, 2621, 2625, 2629, 2633, 2637, 2641, 2645, 2649, 2653, 2657, 2661, 2665, 2669, 2673, 2677, 2681, 2685, 2689, 2693, 2697, 2701, 2705, 2709, 2713, 2717, 2721, 2725, 2729, 2733, 2737, 2741, 2745, 2749, 2753, 2757, 2761, 2765, 2769, 2773, 2777, 2781, 2785, 2789, 2793, 2797, 2801, 2805, 2809, 2813, 2817, 2821, 2825, 2829, 2833, 2837, 2841, 2845, 2849, 2853, 2857, 2861, 2865, 2869, 2873, 2877, 2881, 2885, 2889, 2893, 2897, 2901, 2905, 2909, 2913, 2917, 2921, 2925, 2929, 2933, 2937, 2941, 2945, 2949, 2953, 2957, 2961, 2965, 2969, 2973, 2977, 2981, 2985, 2989, 2993, 2997, 3001, 3005, 3009, 3013, 3017, 3021, 3025, 3029, 3033, 3037, 3041, 3045, 3049, 3053, 3057, 3061, 3065, 3069, 3073, 3077, 3081, 3085, 3089, 3093, 3097, 3101, 3105, 3109, 3113, 3117, 3121, 3125, 3129, 3133, 3137, 3141, 3145, 3149, 3153, 3157, 3161, 3165, 3169, 3173, 3177, 3181, 3185, 3189, 3193, 3197, 3201, 3205, 3209, 3213, 3217, 3221, 3225, 3229, 3233, 3237, 3241, 3245, 3249, 3253, 3257, 3261, 3265, 3269, 3273, 3277, 3281, 3285, 3289, 3293, 3297, 3301, 3305, 3309, 3313, 3317, 3321, 3325, 3329, 3333, 3337, 3341, 3345, 3349, 3353, 3357, 3361, 3365, 3369, 3373, 3377, 3381, 3385, 3389, 3393, 3397, 3401, 3405, 3409, 3413, 3417, 3421, 3425, 3429, 3433, 3437, 3441, 3445, 3449, 3453, 3457, 3461, 3465, 3469, 3473, 3477, 3481, 3485, 3489, 3493, 3497, 3501, 3505, 3509, 3513, 3517, 3521, 3525, 3529, 3533, 3537, 3541, 3545, 3549, 3553, 3557, 3561, 3565, 3569, 3573, 3577, 3581, 3585, 3589, 3593, 3597, 3601, 3605, 3609, 3613, 3617, 3621, 3625, 3629, 3633, 3637, 3641, 3645, 3649, 3653, 3657, 3661, 3665, 3669, 3673, 3677, 3681, 3685, 3689, 3693, 3697, 3701, 3705, 3709, 3713, 3717, 3721, 3725, 3729, 3733, 3737, 3741, 3745, 3749, 3753, 3757, 3761, 3765, 3769, 3773, 3777, 3781, 3785, 3789, 3793, 3797, 3801, 3805, 3809, 3813, 3817, 3821, 3825, 3829, 3833, 3837, 3841, 3845, 3849, 3853, 3857, 3861, 3865, 3869, 3873, 3877, 3881, 3885, 3889, 3893, 3897, 3901, 3905, 3909, 3913, 3917, 3921, 3925, 3929, 3933, 3937, 3941, 3945, 3949, 3953, 3957, 3961, 3965, 3969, 3973, 3977, 3981, 3985, 3989, 3993, 3997, 4001, 4005, 4009, 4013, 4017, 4021, 4025, 4029, 4033, 4037, 4041, 4045, 4049, 4053, 4057, 4061, 4065, 4069, 4073, 4077, 4081, 4085, 4089, 4093, 4097, 4101, 4105, 4109, 4113, 4117, 4121, 4125, 4129, 4133, 4137, 4141, 4145, 4149, 4153, 4157, 4161, 4165, 4169, 4173, 4177, 4181, 4185, 4189, 4193, 4197, 4201, 4205, 4209, 4213, 4217, 4221, 4225, 4229, 4233, 4237, 4241, 4245, 4249, 4253, 4257, 4261, 4265, 4269, 4273, 4277, 4281, 4285, 4289, 4293, 4297, 4301, 4305, 4309, 4313, 4317, 4321, 4325, 4329, 4333, 4337, 4341, 4345, 4349, 4353, 4357, 4361, 4365, 4369, 4373, 4377, 4381, 4385, 4389, 4393, 4397, 4401, 4405, 4409, 4413, 4417, 4421, 4425, 4429, 4433, 4437, 4441, 4445, 4449, 4453, 4457, 4461, 4465, 4469, 4473, 4477, 4481, 4485, 4489, 4493, 4497, 4501, 4505, 4509, 4513, 4517, 4521, 4525, 4529, 4533, 4537, 4541, 4545, 4549, 4553, 4557, 4561, 4565, 4569, 4573, 4577, 4581, 4585, 4589, 4593, 4597, 4601, 4605, 4609, 4613, 4617, 4621, 4625, 4629, 4633, 4637, 4641, 4645, 4649, 4653, 4657, 4661, 4665, 4669, 4673, 4677, 4681, 4685, 4689, 4693, 4697, 4701, 4705, 4709, 4713, 4717, 4721, 4725, 4729, 4733, 4737, 4741, 4745, 4749, 4753, 4757, 4761, 4765, 4769, 4773, 4777, 4781, 4785, 4789, 4793, 4797, 4801, 4805, 4809, 4813, 4817, 4821, 4825, 4829, 4833, 4837, 4841, 4845, 4849, 4853, 4857, 4861, 4865, 4869, 4873, 4877, 4881, 4885, 4889, 4893, 4897, 4901, 4905, 4909, 4913, 4917, 4921, 4925, 4929, 4933, 4937, 4941, 4945, 4949, 4953, 4957, 4961, 4965, 4969, 4973, 4977, 4981, 4985, 4989, 4993, 4997, 5001, 5005, 5009, 5013, 5017, 5021, 5025, 5029, 5033, 5037, 5041, 5045, 5049, 5053, 5057, 5061, 5065, 5069, 5073, 5077, 5081, 5085, 5089, 5093, 5097, 5101, 5105, 5109, 5113, 5117, 5121, 5125, 5129, 5133, 5137, 5141, 5145, 5149, 5153, 5157, 5161, 5165, 5169, 5173, 5177, 5181, 5185, 5189, 5193, 5197, 5201, 5205, 5209, 5213, 5217, 5221, 5225, 5229, 5233, 5237, 5241, 5245, 5249, 5253, 5257, 5261, 5265, 5269, 5273, 5277, 5281, 5285, 5289, 5293, 5297, 5301, 5305, 5309, 5313, 5317, 5321, 5325, 5329, 5333, 5337, 5341, 5345, 5349, 5353, 5357, 5361, 5365, 5369, 5373, 5377, 5381, 5385, 5389, 5393, 5397, 5401, 5405, 5409, 5413, 5417, 5421, 5425, 5429, 5433, 5437, 5441, 5445, 5449, 5453, 5457, 5461, 5465, 5469, 5473, 5477, 5481, 5485, 5489, 5493, 5497, 5501, 5505, 5509, 5513, 5517, 5521, 5525, 5529, 5533, 5537, 5541, 5545, 5549, 5553, 5557, 5561, 5565, 5569, 5573, 5577, 5581, 5585, 5589, 5593, 5597, 5601, 5605, 5609, 5613, 5617, 5621, 5625, 5629, 5633, 5637, 5641, 5645, 5649, 5653, 5657, 5661, 5665, 5669, 5673, 5677, 5681, 5685, 5689, 5693, 5697, 5701, 5705, 5709, 5713, 5717, 5721, 5725, 5729, 5733, 5737, 5741, 5745, 5749, 5753, 5757, 5761, 5765, 5769, 5773, 5777, 5781, 5785, 5789, 5793, 5797, 5801, 5805, 5809, 5813, 5817, 5821, 5825, 5829, 5833, 5837, 5841, 5845, 5849, 5853, 5857, 5861, 5865, 5869, 5873, 5877, 5881, 5885, 5889, 5893, 5897, 5901, 5905, 5909, 5913, 5917, 5921, 5925, 5929, 5933, 5937, 5941, 5945, 5949, 5953, 5957, 5961, 5965, 5969, 5973, 5977, 5981, 5985, 5989, 5993, 5997, 6001, 6005, 6009, 6013, 6017, 6021, 6025, 6029, 6033, 6037, 6041, 6045, 6049, 6053, 6057, 6061, 6065, 6069, 6073, 6077, 6081, 6085, 6089, 6093, 6097, 6101, 6105, 6109, 6113, 6117, 6121, 6125, 6129, 6133, 6137, 6141, 6145, 6149, 6153, 6157, 6161, 6165, 6169, 6173, 6177, 6181, 6185, 6189, 6193, 6197, 6201, 6205, 6209, 6213, 6217, 6221, 6225, 6229, 6233, 6237, 6241, 6245, 6249, 6253, 6257, 6261, 6265, 6269, 6273, 6277, 6281, 6285, 6289, 6293, 6297, 6301, 6305, 6309, 6313, 6317, 6321, 6325, 6329, 6333, 6337, 6341, 6345, 6349, 6353, 6357, 6361, 6365, 6369, 6373, 6377, 6381, 6385, 6389, 6393, 6397, 6401, 6405, 6409, 6413, 6417, 6421, 6425, 6429, 6433, 6437, 6441, 6445, 6449, 6453, 6457, 6461, 6465, 6469, 6473, 6477, 6481, 6485, 6489, 6493, 6497, 6501, 6505, 6509, 6513, 6517, 6521, 6525, 6529, 6533, 6537, 6541, 6545, 6549, 6553, 6557, 6561, 6565, 6569, 6573, 6577, 6581, 6585, 6589, 6593, 6597, 6601, 6605, 6609, 6613, 6617, 6621, 6625, 6629, 6633, 6637, 6641, 6645, 6649, 6653, 6657, 6661, 6665, 6669, 6673, 6677, 6681, 6685, 6689, 6693, 6697, 6701, 6705, 6709, 6713, 6717, 6721, 6725, 6729, 6733, 6737, 6741, 6745, 6749, 6753, 6757, 6761, 6765, 6769, 6773, 6777, 6781, 6785, 6789, 6793, 6797, 6801, 6805, 6809, 6813, 6817, 6821, 6825, 6829, 6833, 6837, 6841, 6845, 6849, 6853, 6857, 6861, 6865, 6869, 6873, 6877, 6881, 6885, 6889, 6893, 6897, 6901, 6905, 6909, 6913, 6917, 6921, 6925, 6929, 6933, 6937, 6941, 6945, 6949, 6953, 6957, 6961, 6965, 6969, 6973, 6977, 6981, 6985, 6989, 6993, 6997, 7001, 7005, 7009, 7013, 7017, 7021, 7025, 7029, 7033, 7037, 7041, 7045, 7049, 7053, 7057, 7061, 7065, 7069, 7073, 7077, 7081, 7085, 7089, 7093, 7097, 7101, 7105, 7109, 7113, 7117, 7121, 7125, 7129, 7133, 7137, 7141, 7145, 7149, 7153, 7157, 7161, 7165, 7169, 7173, 7177, 7181, 7185, 7189, 7193, 7197, 7201, 7205, 7209, 7213, 7217, 7221, 7225, 7229, 7233, 7237, 7241, 7245, 7249, 7253, 7257, 7261, 7265, 7269, 7273, 7277, 7281, 7285, 7289, 7293, 7297, 7301, 7305, 7309, 7313, 7317, 7321, 7325, 7329, 7333, 7337, 7341, 7345, 7349, 7353, 7357, 7361, 7365, 7369, 7373, 7377, 7381, 7385, 7389, 7393, 7397, 7401, 7405, 7409, 7413, 7417, 7421, 7425, 7429, 7433, 7437, 7441, 7445, 7449, 7453, 7457, 7461, 7465, 7469, 7473, 7477, 7481, 7485, 7489, 7493, 7497, 7501, 7505, 7509, 7513, 7517, 7521, 7525, 7529, 7533, 7537, 7541, 7545, 7549, 7553, 7557, 7561, 7565, 7569, 7573, 7577, 7581, 7585, 7589, 7593, 7597, 7601, 7605, 7609, 7613, 7617, 7621, 7625, 7629, 7633, 7637, 7641, 7645, 7649, 7653, 7657, 7661, 7665, 7669, 7673, 7677, 7681, 7685, 7689, 7693, 7697, 7701, 7705, 7709, 7713, 7717, 7721, 7725, 7729, 7733, 7737, 7741, 7745, 7749, 7753, 7757, 7761, 7765, 7769, 7773, 7777, 7781, 7785, 7789, 7793, 7797, 7801, 7805, 7809, 7813, 7817, 7821, 7825, 7829, 7833, 7837, 7841, 7845, 7849, 7853, 7857, 7861, 7865, 7869, 7873, 7877, 7881, 7885, 7889, 7893, 7897, 7901, 7905, 7909, 7913, 7917, 7921, 7925, 7929, 7933, 7937, 7941, 7945, 7949, 7953, 7957,$$

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$$x - \sqrt{3-2x}$$

$$x - \sqrt{3-2x} \neq 0 \rightarrow x \neq \sqrt{3-2x} \rightarrow x^2 \neq 3-2x$$

$$x^2 + 2x - 3 \neq 0 \rightarrow (x+3)(x-1)$$

$$x - \sqrt{3-2x} \neq 0 \rightarrow x \neq \frac{3}{2}$$

$$D_f = (-\infty, \frac{3}{2}] - \{1\}$$



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$$x - \sqrt{3x-2}$$

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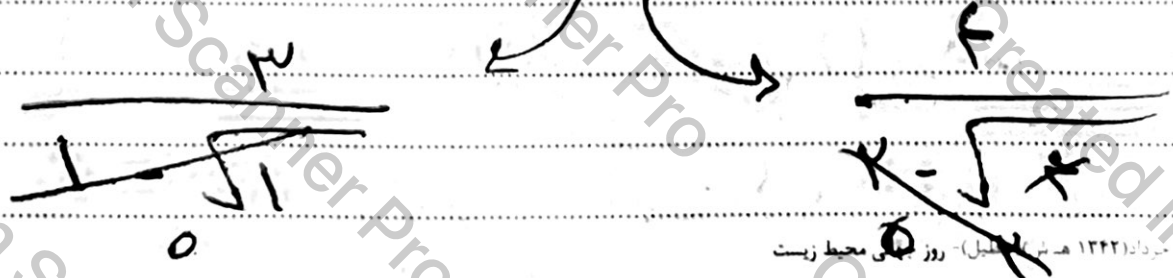
$$x \neq \sqrt{3x-2} \rightarrow x^2 \neq 3x-2 \rightarrow x^2 - 3x + 2 \neq 0$$

$$(x-1)(x-2)$$

$$3x-2 \geq 0 \rightarrow 3x \geq 2 \rightarrow x \geq \frac{2}{3}$$

$$1 \leftarrow 2 \leftarrow$$

$$D_f = [\frac{2}{3}, +\infty) - \{1, 2\}$$



الف) $y = \frac{\sin x}{x \cos x - 1}$

$x \cos x - 1 \neq 0 \rightarrow x \cos x \neq 1 \rightarrow \cos x \neq \frac{1}{x}$

$D_f = \mathbb{R} - \left\{ 2k\pi \pm \frac{\pi}{4} \right\} \quad 0, \pi, \dots$

ب) $x \sin x + 1 \neq 0 \rightarrow x \sin x \neq -1 \rightarrow \sin x \neq -\frac{1}{x}$

$D_f = \mathbb{R} - \left\{ 2k\pi - \frac{\pi}{4}, 2k\pi + \frac{5\pi}{4} \right\} \quad 0, \pi, \dots$

ج) $\cot x - 1 \neq 0 \rightarrow \cot x \neq 1 \quad \pi/4, 5\pi/4$

$D_f = \mathbb{R} - \left\{ k\pi + \frac{\pi}{4}, k\pi + \frac{5\pi}{4} \right\} \quad 0, \pi, \dots$

د) $\sqrt{x} \sin x - x \neq 0 \rightarrow \sqrt{x} \sin x \neq x \rightarrow \sin x \neq \frac{\sqrt{x}}{x}$

$D_f = \mathbb{R} - \left\{ k\pi + \frac{\pi}{4}, k\pi + \frac{5\pi}{4} \right\} \quad \sin \neq \frac{\sqrt{x}}{x}$

الف) $x^2 - 5x + 4 > 0 \rightarrow (x-4)(x-1) > 0$

$\begin{array}{c|cc} x & 1 & 4 \\ \hline y & + & - \end{array} \quad D_f = (-\infty, 1) \cup (4, +\infty)$

ب) $x^2 - 6x + 5 < 0 \rightarrow (x-1)(x-5) < 0$

$\begin{array}{c|cc} x & 1 & 5 \\ \hline y & + & - \end{array} \rightarrow D_f = (1, 5)$

ج) $x^2 + 4x + 5 > 0 \rightarrow (x+1)(x+5) > 0$

$\begin{array}{c|cc} x & -5 & -1 \\ \hline y & + & - \end{array} \quad D_f = (-\infty, -5) \cup (-1, +\infty)$

$$1) x^2 - 4x + 5 \geq 0 \rightarrow (x-4)(x-1) \leq 0$$

$$2) \frac{x^2 - 4x + 5}{x^2 - 1} \geq 0 \rightarrow D_f = [1, 4]$$

$$الف) \frac{x^2 - 4x + 5}{x^2 - 1} < 0$$

$$\frac{(x-2)(x-1)}{(x-1)(x+1)}$$

$$\frac{x}{y} \begin{array}{c|c} 1 & 2 \\ \hline 0 & - \end{array} \begin{array}{c|c} 1 & 2 \\ \hline 0 & - \end{array} \begin{array}{c|c} 1 & 2 \\ \hline 0 & - \end{array}$$

$$D_f = (-\infty, -1) \cup (2, \infty)$$

$$ب) \frac{x^2 - 1}{x^2 - 4x + 5} \geq 0$$

$$\frac{(x-1)(x+1)}{(x-2)(x-1)}$$

$$\frac{x}{y} \begin{array}{c|c} -1 & 1 \\ \hline 0 & - \end{array} \begin{array}{c|c} 1 & 2 \\ \hline 0 & - \end{array} \begin{array}{c|c} 1 & 2 \\ \hline 0 & - \end{array}$$

$$D_f = (-\infty, -1] \cup (2, \infty)$$

$$الف) y \leq \frac{x^2 - 4x + 3}{x^3 - 1} \rightarrow \frac{(x-3)(x-1)}{(x-1)(x^2 + x + 1)} \geq 0$$

$$\frac{(x-3)(x-1)}{(x-1)(x^2 + x + 1)}$$

$$\frac{x}{y} \begin{array}{c|c} 1 & 3 \\ \hline 0 & - \end{array} \begin{array}{c|c} 1 & 3 \\ \hline 0 & - \end{array} \begin{array}{c|c} 1 & 3 \\ \hline 0 & - \end{array}$$

$$D_f = [3, \infty)$$

$$ب) y \leq \frac{x^2 - 4x + 3}{x^2 - 1}$$

$$x^2 - 1 \neq 0$$

$$(x-1)(x+1) \neq 0$$

$$D_f = \mathbb{R} - \{ \pm 1 \}$$

الف) $\log(x^2 - 3x)$

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$x(x-3) > 0 \rightarrow \frac{x}{y} \begin{array}{c|c} 3 & \\ \hline \phi & -\phi \end{array} D_f s (-\infty, 0) \cup (3, +\infty)$

ب) $\log(4 - x^2) > 0 \rightarrow -(x-2)(x+2) > 0 \rightarrow \frac{x}{y} \begin{array}{c|c} -2 & 2 \\ \hline -\phi & \phi \end{array}$

$|x-2| > 0 \rightarrow |x|-2 > 0 \rightarrow \begin{cases} x > 2 \\ x < -2 \end{cases}$
 $|x|-2 \neq 1 \rightarrow |x| \neq 3 \rightarrow x \neq \pm 3$

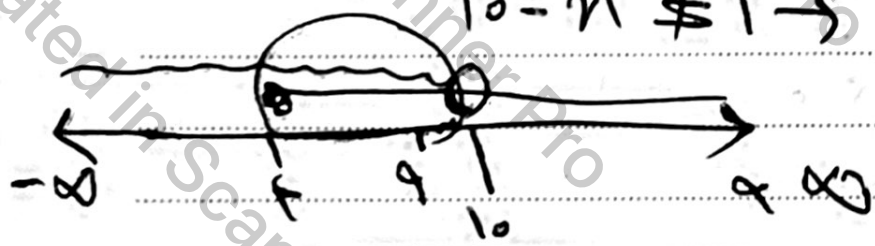
$D_f s (-2, 2) \cup (2, 4) - \{ \pm 3 \}$

ج) $\log \frac{x^2 - 7x + 12}{x-3} > 0 \rightarrow \frac{(x-3)(x-4)}{(x-3)} > 0 \rightarrow \frac{x}{y} \begin{array}{c|c} 4 & \\ \hline -\phi & \phi \end{array}$

$1-x > 0 \rightarrow x < 1$

$1-x \neq 1 \rightarrow x \neq 0$

$\Rightarrow D_f s (0, 1) - \{0\}$



د) $\sqrt{x^2 - 11x + 28} \neq 0 \rightarrow \log \sqrt{x^2 - 11x + 28} > 0 \rightarrow \frac{x}{y} \begin{array}{c|c} 4 & 7 \\ \hline -\phi & \phi \end{array}$

$(x-4)(x-7) > 0 \rightarrow \frac{x}{y} \begin{array}{c|c} 4 & 7 \\ \hline -\phi & \phi \end{array}$

$(-\infty, 4] \cup [7, +\infty)$



$D_f s (0, 4] - \{1\}$

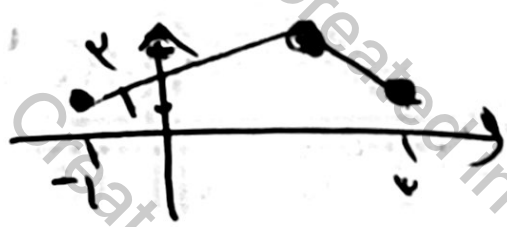
$$y_s = \frac{x^2 - x}{x^2 + x} \quad s = \frac{x^0 (x-1)}{x(x+1)}$$

$$D_f = (-\infty, -1) \cup (1, \infty)$$

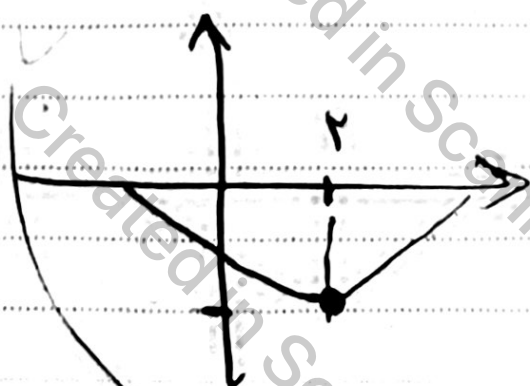
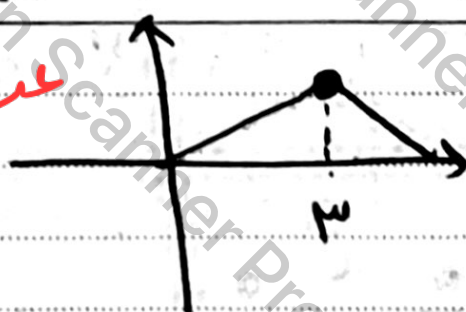
$$y_s = \sqrt{\frac{x - f(x)}{f(x)}}$$

$$D_f = (-2, -1) \cup (1, 2)$$

$$D_f = (-2, -1) \cup (1, 2)$$



عدد دوی محور باید مستطقی شود



سحر لاله - دانشجوی آمریکا به دست دانشجویان به خط امام (۱۳۵۸ هـ ش) - روز ملی مبارزه با استکبار جهانی - روز شهادت امام