

# Resolução da Lista de Exercícios 1

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## *#Questão 1*

*#Crie os seguintes vetores, verificando o tipo de cada um deles.*

*#A) Sequência de números de 5 a 150.*

*#B) Sequência de números de 210 a 1300, com intervalo de 1,75.*

*#C) Raiz quadrada de uma sequência de números de 100 a 235, com intervalo de 2,765.*

*#D) Logaritmo natural de uma sequência de números de 2 a 378, com intervalo de 0,789.*

## *#Questão 2*

*#Crie as seguintes matrizes, verificando o tipo de cada uma delas.*

*#A) Matriz  $7 \times 7$  com números de 1 a 49.*

*#B) Matriz inversa de uma matriz quadrada contendo a seguinte sequência de números:*

*#Coluna 1: 1, 2, 3. Coluna 2: 0, 1, 4. Coluna 3: 5, 6, 0.*

*#C) Matriz transposta de uma matriz  $5 \times 5$  contendo uma sequência de números de 51 a 75.*

*#D) Determinante de uma matriz  $8 \times 8$  com números de 1 a 64.*

## *#Questão 3*

*#Crie um data frame com os dados a seguir e verifique o seu tipo:*

*#Nomes: Estevão, João, Pedro, André, Tiago, Filipe, Paulo e Tomé.*

*#Salário: 1.300, 1.450, 1.256, 1.290, 1.543, 1.789, 1.799, 1.890.*

*#Tempo na empresa (em anos): 1, 2, 1, 1, 3, 4, 4, 6.*

*#Setor em que trabalha: Compras, Compras, Logística, Logística, Marketing, Marketing, RH, Financeiro.*

## *#Questão 4*

*#Crie uma lista com todos os objetos criados nas questões anteriores, verificando seu tipo ao final.*

*#####*  
*#RESOLUÇÃO DA LISTA DE EXERCÍCIOS*

## *#Questão 1*

*#Crie os seguintes vetores, verificando o tipo de cada um deles.*

*#A) Sequência de números de 5 a 150.*

```
vetor1 = seq(5,150)
```

```
vetor1
```

```
##      [1]      5      6      7      8      9     10     11     12     13     14     15     16     17     18     19     20     21     22
```

```
## [19] 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
## [37] 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58
## [55] 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76
## [73] 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94
## [91] 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112
## [109] 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130
## [127] 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148
## [145] 149 150
```

```
typeof(vetor1)
```

```
## [1] "integer"
```

*#B) Sequência de números de 210 a 1300, com intervalo de 1,75.*

```
vetor2 = seq(210, 1300, by = 1.75)
vetor2
```

```
## [1] 210.00 211.75 213.50 215.25 217.00 218.75 220.50 222.25 224.00
## [10] 225.75 227.50 229.25 231.00 232.75 234.50 236.25 238.00 239.75
## [19] 241.50 243.25 245.00 246.75 248.50 250.25 252.00 253.75 255.50
## [28] 257.25 259.00 260.75 262.50 264.25 266.00 267.75 269.50 271.25
## [37] 273.00 274.75 276.50 278.25 280.00 281.75 283.50 285.25 287.00
## [46] 288.75 290.50 292.25 294.00 295.75 297.50 299.25 301.00 302.75
## [55] 304.50 306.25 308.00 309.75 311.50 313.25 315.00 316.75 318.50
## [64] 320.25 322.00 323.75 325.50 327.25 329.00 330.75 332.50 334.25
## [73] 336.00 337.75 339.50 341.25 343.00 344.75 346.50 348.25 350.00
## [82] 351.75 353.50 355.25 357.00 358.75 360.50 362.25 364.00 365.75
## [91] 367.50 369.25 371.00 372.75 374.50 376.25 378.00 379.75 381.50
## [100] 383.25 385.00 386.75 388.50 390.25 392.00 393.75 395.50 397.25
## [109] 399.00 400.75 402.50 404.25 406.00 407.75 409.50 411.25 413.00
## [118] 414.75 416.50 418.25 420.00 421.75 423.50 425.25 427.00 428.75
## [127] 430.50 432.25 434.00 435.75 437.50 439.25 441.00 442.75 444.50
## [136] 446.25 448.00 449.75 451.50 453.25 455.00 456.75 458.50 460.25
## [145] 462.00 463.75 465.50 467.25 469.00 470.75 472.50 474.25 476.00
## [154] 477.75 479.50 481.25 483.00 484.75 486.50 488.25 490.00 491.75
## [163] 493.50 495.25 497.00 498.75 500.50 502.25 504.00 505.75 507.50
## [172] 509.25 511.00 512.75 514.50 516.25 518.00 519.75 521.50 523.25
## [181] 525.00 526.75 528.50 530.25 532.00 533.75 535.50 537.25 539.00
## [190] 540.75 542.50 544.25 546.00 547.75 549.50 551.25 553.00 554.75
## [199] 556.50 558.25 560.00 561.75 563.50 565.25 567.00 568.75 570.50
## [208] 572.25 574.00 575.75 577.50 579.25 581.00 582.75 584.50 586.25
## [217] 588.00 589.75 591.50 593.25 595.00 596.75 598.50 600.25 602.00
## [226] 603.75 605.50 607.25 609.00 610.75 612.50 614.25 616.00 617.75
## [235] 619.50 621.25 623.00 624.75 626.50 628.25 630.00 631.75 633.50
## [244] 635.25 637.00 638.75 640.50 642.25 644.00 645.75 647.50 649.25
## [253] 651.00 652.75 654.50 656.25 658.00 659.75 661.50 663.25 665.00
## [262] 666.75 668.50 670.25 672.00 673.75 675.50 677.25 679.00 680.75
## [271] 682.50 684.25 686.00 687.75 689.50 691.25 693.00 694.75 696.50
## [280] 698.25 700.00 701.75 703.50 705.25 707.00 708.75 710.50 712.25
## [289] 714.00 715.75 717.50 719.25 721.00 722.75 724.50 726.25 728.00
## [298] 729.75 731.50 733.25 735.00 736.75 738.50 740.25 742.00 743.75
## [307] 745.50 747.25 749.00 750.75 752.50 754.25 756.00 757.75 759.50
## [316] 761.25 763.00 764.75 766.50 768.25 770.00 771.75 773.50 775.25
## [325] 777.00 778.75 780.50 782.25 784.00 785.75 787.50 789.25 791.00
## [334] 792.75 794.50 796.25 798.00 799.75 801.50 803.25 805.00 806.75
```

```
## [343] 808.50 810.25 812.00 813.75 815.50 817.25 819.00 820.75 822.50
## [352] 824.25 826.00 827.75 829.50 831.25 833.00 834.75 836.50 838.25
## [361] 840.00 841.75 843.50 845.25 847.00 848.75 850.50 852.25 854.00
## [370] 855.75 857.50 859.25 861.00 862.75 864.50 866.25 868.00 869.75
## [379] 871.50 873.25 875.00 876.75 878.50 880.25 882.00 883.75 885.50
## [388] 887.25 889.00 890.75 892.50 894.25 896.00 897.75 899.50 901.25
## [397] 903.00 904.75 906.50 908.25 910.00 911.75 913.50 915.25 917.00
## [406] 918.75 920.50 922.25 924.00 925.75 927.50 929.25 931.00 932.75
## [415] 934.50 936.25 938.00 939.75 941.50 943.25 945.00 946.75 948.50
## [424] 950.25 952.00 953.75 955.50 957.25 959.00 960.75 962.50 964.25
## [433] 966.00 967.75 969.50 971.25 973.00 974.75 976.50 978.25 980.00
## [442] 981.75 983.50 985.25 987.00 988.75 990.50 992.25 994.00 995.75
## [451] 997.50 999.25 1001.00 1002.75 1004.50 1006.25 1008.00 1009.75 1011.50
## [460] 1013.25 1015.00 1016.75 1018.50 1020.25 1022.00 1023.75 1025.50 1027.25
## [469] 1029.00 1030.75 1032.50 1034.25 1036.00 1037.75 1039.50 1041.25 1043.00
## [478] 1044.75 1046.50 1048.25 1050.00 1051.75 1053.50 1055.25 1057.00 1058.75
## [487] 1060.50 1062.25 1064.00 1065.75 1067.50 1069.25 1071.00 1072.75 1074.50
## [496] 1076.25 1078.00 1079.75 1081.50 1083.25 1085.00 1086.75 1088.50 1090.25
## [505] 1092.00 1093.75 1095.50 1097.25 1099.00 1100.75 1102.50 1104.25 1106.00
## [514] 1107.75 1109.50 1111.25 1113.00 1114.75 1116.50 1118.25 1120.00 1121.75
## [523] 1123.50 1125.25 1127.00 1128.75 1130.50 1132.25 1134.00 1135.75 1137.50
## [532] 1139.25 1141.00 1142.75 1144.50 1146.25 1148.00 1149.75 1151.50 1153.25
## [541] 1155.00 1156.75 1158.50 1160.25 1162.00 1163.75 1165.50 1167.25 1169.00
## [550] 1170.75 1172.50 1174.25 1176.00 1177.75 1179.50 1181.25 1183.00 1184.75
## [559] 1186.50 1188.25 1190.00 1191.75 1193.50 1195.25 1197.00 1198.75 1200.50
## [568] 1202.25 1204.00 1205.75 1207.50 1209.25 1211.00 1212.75 1214.50 1216.25
## [577] 1218.00 1219.75 1221.50 1223.25 1225.00 1226.75 1228.50 1230.25 1232.00
## [586] 1233.75 1235.50 1237.25 1239.00 1240.75 1242.50 1244.25 1246.00 1247.75
## [595] 1249.50 1251.25 1253.00 1254.75 1256.50 1258.25 1260.00 1261.75 1263.50
## [604] 1265.25 1267.00 1268.75 1270.50 1272.25 1274.00 1275.75 1277.50 1279.25
## [613] 1281.00 1282.75 1284.50 1286.25 1288.00 1289.75 1291.50 1293.25 1295.00
## [622] 1296.75 1298.50
```

```
typeof(vetor2)
```

```
## [1] "double"
```

*#C) Raiz quadrada de uma sequência de números de 100 a 235, com intervalo de 2,765.*

```
vetor3 = sqrt(seq(100, 235, by = 2.765))
vetor3
```

```
## [1] 10.00000 10.13731 10.27278 10.40649 10.53850 10.66888 10.79768 10.92497
## [9] 11.05079 11.17520 11.29823 11.41994 11.54036 11.65955 11.77752 11.89433
## [17] 12.01000 12.12456 12.23806 12.35051 12.46194 12.57239 12.68188 12.79043
## [25] 12.89806 13.00481 13.11068 13.21571 13.31991 13.42330 13.52590 13.62773
## [33] 13.72880 13.82914 13.92875 14.02765 14.12586 14.22340 14.32027 14.41648
## [41] 14.51206 14.60702 14.70136 14.79510 14.88825 14.98082 15.07282 15.16427
## [49] 15.25516
```

```
typeof(vetor3)
```

```
## [1] "double"
```

*#D) Logaritmo natural de uma sequência de números de 2 a 378, com intervalo de 0,789.*

```
vetor4 = log(seq(2,378, by = 0.789))
vetor4
```

```
## [1] 0.6931472 1.0256831 1.2748040 1.4740763 1.6401611 1.7825505 1.9071693
## [8] 2.0179650 2.1177003 2.2083843 2.2915241 2.3682792 2.4395605 2.5060972
## [15] 2.5684816 2.6272016 2.6826640 2.7352113 2.7851347 2.8326838 2.8780742
## [22] 2.9214935 2.9631058 3.0030554 3.0414702 3.0784637 3.1141373 3.1485821
## [29] 3.1818798 3.2141045 3.2453230 3.2755964 3.3049801 3.3335251 3.3612778
## [36] 3.3882810 3.4145742 3.4401937 3.4651732 3.4895440 3.5133349 3.5365729
## [43] 3.5592832 3.5814891 3.6032126 3.6244743 3.6452932 3.6656876 3.6856743
## [50] 3.7052694 3.7244879 3.7433440 3.7618511 3.7800219 3.7978684 3.8154020
## [57] 3.8326334 3.8495730 3.8662303 3.8826148 3.8987351 3.9145997 3.9302165
## [64] 3.9455932 3.9607370 3.9756549 3.9903535 4.0048392 4.0191180 4.0331958
## [71] 4.0470782 4.0607705 4.0742779 4.0876052 4.1007573 4.1137386 4.1265536
## [78] 4.1392064 4.1517011 4.1640416 4.1762317 4.1882750 4.2001750 4.2119350
## [85] 4.2235583 4.2350481 4.2464073 4.2576390 4.2687459 4.2797309 4.2905964
## [92] 4.3013452 4.3119796 4.3225022 4.3329152 4.3432208 4.3534214 4.3635189
## [99] 4.3735155 4.3834132 4.3932138 4.4029194 4.4125316 4.4220523 4.4314832
## [106] 4.4408261 4.4500824 4.4592538 4.4683419 4.4773482 4.4862740 4.4951209
## [113] 4.5038902 4.5125833 4.5212014 4.5297460 4.5382181 4.5466190 4.5549500
## [120] 4.5632121 4.5714066 4.5795344 4.5875967 4.5955945 4.6035288 4.6114007
## [127] 4.6192111 4.6269610 4.6346513 4.6422829 4.6498567 4.6573736 4.6648343
## [134] 4.6722399 4.6795910 4.6868884 4.6941330 4.7013255 4.7084666 4.7155570
## [141] 4.7225976 4.7295889 4.7365317 4.7434266 4.7502744 4.7570755 4.7638307
## [148] 4.7705405 4.7772057 4.7838267 4.7904042 4.7969386 4.8034307 4.8098809
## [155] 4.8162897 4.8226578 4.8289855 4.8352735 4.8415221 4.8477320 4.8539035
## [162] 4.8600372 4.8661335 4.8721928 4.8782157 4.8842025 4.8901536 4.8960696
## [169] 4.9019507 4.9077975 4.9136103 4.9193895 4.9251355 4.9308487 4.9365294
## [176] 4.9421780 4.9477949 4.9533804 4.9589349 4.9644587 4.9699522 4.9754156
## [183] 4.9808494 4.9862538 4.9916291 4.9969758 5.0022939 5.0075840 5.0128462
## [190] 5.0180808 5.0232882 5.0284687 5.0336224 5.0387497 5.0438508 5.0489261
## [197] 5.0539757 5.0590000 5.0639991 5.0689734 5.0739230 5.0788483 5.0837494
## [204] 5.0886267 5.0934802 5.0983103 5.1031172 5.1079011 5.1126623 5.1174008
## [211] 5.1221170 5.1268111 5.1314833 5.1361337 5.1407626 5.1453701 5.1499566
## [218] 5.1545221 5.1590668 5.1635910 5.1680948 5.1725784 5.1770420 5.1814858
## [225] 5.1859099 5.1903145 5.1946998 5.1990659 5.2034131 5.2077415 5.2120512
## [232] 5.2163424 5.2206153 5.2248699 5.2291066 5.2333254 5.2375265 5.2417100
## [239] 5.2458760 5.2500248 5.2541565 5.2582711 5.2623689 5.2664500 5.2705144
## [246] 5.2745624 5.2785941 5.2826096 5.2866091 5.2905926 5.2945603 5.2985123
## [253] 5.3024488 5.3063699 5.3102756 5.3141661 5.3180416 5.3219020 5.3257477
## [260] 5.3295786 5.3333949 5.3371967 5.3409841 5.3447572 5.3485161 5.3522609
## [267] 5.3559918 5.3597088 5.3634120 5.3671015 5.3707776 5.3744401 5.3780893
## [274] 5.3817252 5.3853479 5.3889576 5.3925542 5.3961380 5.3997090 5.4032673
## [281] 5.4068130 5.4103461 5.4138668 5.4173751 5.4208712 5.4243551 5.4278269
## [288] 5.4312867 5.4347346 5.4381706 5.4415949 5.4450074 5.4484084 5.4517978
## [295] 5.4551758 5.4585424 5.4618977 5.4652418 5.4685748 5.4718967 5.4752075
## [302] 5.4785075 5.4817966 5.4850749 5.4883425 5.4915995 5.4948459 5.4980817
## [309] 5.5013072 5.5045223 5.5077270 5.5109216 5.5141059 5.5172802 5.5204444
## [316] 5.5235986 5.5267429 5.5298774 5.5330021 5.5361170 5.5392222 5.5423179
## [323] 5.5454040 5.5484806 5.5515477 5.5546055 5.5576540 5.5606932 5.5637232
## [330] 5.5667440 5.5697557 5.5727584 5.5757521 5.5787369 5.5817128 5.5846798
## [337] 5.5876381 5.5905876 5.5935285 5.5964608 5.5993845 5.6022996 5.6052063
## [344] 5.6081046 5.6109944 5.6138760 5.6167493 5.6196143 5.6224712 5.6253199
## [351] 5.6281605 5.6309931 5.6338177 5.6366343 5.6394430 5.6422439 5.6450369
```

```
## [358] 5.6478222 5.6505997 5.6533695 5.6561317 5.6588862 5.6616332 5.6643727
## [365] 5.6671047 5.6698292 5.6725463 5.6752561 5.6779586 5.6806537 5.6833416
## [372] 5.6860224 5.6886959 5.6913623 5.6940217 5.6966739 5.6993192 5.7019575
## [379] 5.7045888 5.7072132 5.7098308 5.7124415 5.7150455 5.7176426 5.7202331
## [386] 5.7228168 5.7253939 5.7279644 5.7305283 5.7330856 5.7356364 5.7381807
## [393] 5.7407185 5.7432500 5.7457750 5.7482937 5.7508060 5.7533120 5.7558118
## [400] 5.7583054 5.7607927 5.7632739 5.7657489 5.7682179 5.7706807 5.7731375
## [407] 5.7755883 5.7780331 5.7804719 5.7829048 5.7853317 5.7877528 5.7901681
## [414] 5.7925775 5.7949812 5.7973791 5.7997712 5.8021576 5.8045384 5.8069135
## [421] 5.8092830 5.8116469 5.8140052 5.8163579 5.8187051 5.8210469 5.8233831
## [428] 5.8257139 5.8280393 5.8303593 5.8326740 5.8349832 5.8372872 5.8395859
## [435] 5.8418793 5.8441674 5.8464503 5.8487281 5.8510006 5.8532680 5.8555303
## [442] 5.8577874 5.8600395 5.8622865 5.8645285 5.8667655 5.8689974 5.8712244
## [449] 5.8734465 5.8756636 5.8778758 5.8800832 5.8822856 5.8844833 5.8866761
## [456] 5.8888641 5.8910473 5.8932258 5.8953996 5.8975686 5.8997330 5.9018926
## [463] 5.9040476 5.9061980 5.9083438 5.9104849 5.9126215 5.9147536 5.9168811
## [470] 5.9190041 5.9211226 5.9232366 5.9253461 5.9274512 5.9295519 5.9316482
## [477] 5.9337401
```

```
typeof(vetor4)
```

```
## [1] "double"
```

*#Questão 2*

*#Crie as seguintes matrizes, verificando o tipo de cada uma delas.*

*#A) Matriz 7 x 7 com números de 1 a 49.*

```
matriz1 = matrix(seq(1, 49), nrow = 7, ncol = 7)
matriz1
```

```
##      [,1] [,2] [,3] [,4] [,5] [,6] [,7]
## [1,]    1    8   15   22   29   36   43
## [2,]    2    9   16   23   30   37   44
## [3,]    3   10   17   24   31   38   45
## [4,]    4   11   18   25   32   39   46
## [5,]    5   12   19   26   33   40   47
## [6,]    6   13   20   27   34   41   48
## [7,]    7   14   21   28   35   42   49
```

```
typeof(matriz1)
```

```
## [1] "integer"
```

*#B) Matriz inversa de uma matriz quadrada contendo a seguinte sequência de números:  
#Coluna 1: 1, 2, 3. Coluna 2: 0, 1, 4. Coluna 3: 5, 6, 0.*

```
matriz2 = solve(matrix(c(1, 2, 3, 0, 1, 4, 5, 6, 0), nrow = 3, ncol = 3))
matriz2
```

```
##      [,1] [,2] [,3]
## [1,] -24   20  -5
## [2,]  18  -15   4
## [3,]   5   -4   1
```

```
typeof(matriz2)
```

```
## [1] "double"
```

*#C) Matriz transposta de uma matriz 5 x 5 contendo uma sequência de números de 51 a 75.*

```
matriz3 = t(matrix(seq(51, 75), nrow = 5, ncol = 5))
matriz3
```

```
##      [,1] [,2] [,3] [,4] [,5]
## [1,]   51   52   53   54   55
## [2,]   56   57   58   59   60
## [3,]   61   62   63   64   65
## [4,]   66   67   68   69   70
## [5,]   71   72   73   74   75
```

```
typeof(matriz3)
```

```
## [1] "integer"
```

*#D) Determinante de uma matriz 8 x 8 com números de 1 a 64.*

```
matriz4 = det(matrix(seq(1, 64), nrow = 8, ncol = 8))
matriz4
```

```
## [1] 0
```

```
typeof(matriz4)
```

```
## [1] "double"
```

*#Questão 3*

*#Crie um data frame com os dados a seguir e verifique o seu tipo:*

*#Nomes: Estevão, João, Pedro, André, Tiago, Filipe, Paulo e Tomé.*

*#Salário: 1.300, 1.450, 1.256, 1.290, 1.543, 1.789, 1.799, 1.890.*

*#Tempo na empresa (em anos): 1, 2, 1, 1, 3, 4, 4, 6.*

*#Setor em que trabalha: Compras, Compras, Logística, Logística, Marketing, Marketing, RH, Financeiro.*

```
nomes = c("Estevão", "João", "Pedro", "André", "Tiago", "Filipe", "Paulo", "Tomé")
```

```
salario = c(1300, 1450, 1256, 1290, 1543, 1789, 1799, 1890)
```

```
tempoemp = c(1, 2, 1, 1, 3, 4, 4, 6)
```

```
setor = c("Compras", "Compras", "Logística", "Logística", "Marketing", "Marketing", "RH", "Financeiro")
```

```
nomes
```

```
## [1] "Estevão" "João"    "Pedro"   "André"   "Tiago"   "Filipe"  "Paulo"
## [8] "Tomé"
```

```
typeof(nomes)
```

```
## [1] "character"
```

```
salario
```

```
## [1] 1300 1450 1256 1290 1543 1789 1799 1890
```

```
typeof(salario)
```

```
## [1] "double"
```

```
tempoemp

## [1] 1 2 1 1 2 4 4 6

typeof(tempoemp)

## [1] "double"

setor

## [1] "Compras" "Compras" "Logística" "Logística" "Marketing"
## [6] "Marketing" "RH" "Financeiro"

typeof(setor)
```

```
## [1] "character"

dadosnovos = data.frame(nomes, salario, tempoemp, setor)
dadosnovos
```

```
##      nomes  salario tempoemp      setor
## 1 Estevão   1300         1   Compras
## 2 João     1450         2   Compras
## 3 Pedro    1256         1 Logística
## 4 André    1290         1 Logística
## 5 Tiago    1543         2 Marketing
## 6 Filipe   1789         4 Marketing
## 7 Paulo    1799         4         RH
## 8 Tomé     1890         6 Financeiro
```

```
typeof(dadosnovos)
```

```
## [1] "list"
```

*#Questão 4*

*#Crie uma lista com todos os objetos criados nas questões anteriores, verificando seu tipo ao final.*

```
listanova = list(vetor1, vetor2, vetor3, vetor4, matriz1, matriz2, matriz3, matriz4, dadosnovos)
listanova
```

```
## [[1]]
## [1] 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
## [19] 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
## [37] 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58
## [55] 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76
## [73] 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94
## [91] 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112
## [109] 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130
## [127] 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148
## [145] 149 150
##
## [[2]]
## [1] 210.00 211.75 213.50 215.25 217.00 218.75 220.50 222.25 224.00
## [10] 225.75 227.50 229.25 231.00 232.75 234.50 236.25 238.00 239.75
## [19] 241.50 243.25 245.00 246.75 248.50 250.25 252.00 253.75 255.50
## [28] 257.25 259.00 260.75 262.50 264.25 266.00 267.75 269.50 271.25
## [37] 273.00 274.75 276.50 278.25 280.00 281.75 283.50 285.25 287.00
## [46] 288.75 290.50 292.25 294.00 295.75 297.50 299.25 301.00 302.75
```

##	[55]	304.50	306.25	308.00	309.75	311.50	313.25	315.00	316.75	318.50
##	[64]	320.25	322.00	323.75	325.50	327.25	329.00	330.75	332.50	334.25
##	[73]	336.00	337.75	339.50	341.25	343.00	344.75	346.50	348.25	350.00
##	[82]	351.75	353.50	355.25	357.00	358.75	360.50	362.25	364.00	365.75
##	[91]	367.50	369.25	371.00	372.75	374.50	376.25	378.00	379.75	381.50
##	[100]	383.25	385.00	386.75	388.50	390.25	392.00	393.75	395.50	397.25
##	[109]	399.00	400.75	402.50	404.25	406.00	407.75	409.50	411.25	413.00
##	[118]	414.75	416.50	418.25	420.00	421.75	423.50	425.25	427.00	428.75
##	[127]	430.50	432.25	434.00	435.75	437.50	439.25	441.00	442.75	444.50
##	[136]	446.25	448.00	449.75	451.50	453.25	455.00	456.75	458.50	460.25
##	[145]	462.00	463.75	465.50	467.25	469.00	470.75	472.50	474.25	476.00
##	[154]	477.75	479.50	481.25	483.00	484.75	486.50	488.25	490.00	491.75
##	[163]	493.50	495.25	497.00	498.75	500.50	502.25	504.00	505.75	507.50
##	[172]	509.25	511.00	512.75	514.50	516.25	518.00	519.75	521.50	523.25
##	[181]	525.00	526.75	528.50	530.25	532.00	533.75	535.50	537.25	539.00
##	[190]	540.75	542.50	544.25	546.00	547.75	549.50	551.25	553.00	554.75
##	[199]	556.50	558.25	560.00	561.75	563.50	565.25	567.00	568.75	570.50
##	[208]	572.25	574.00	575.75	577.50	579.25	581.00	582.75	584.50	586.25
##	[217]	588.00	589.75	591.50	593.25	595.00	596.75	598.50	600.25	602.00
##	[226]	603.75	605.50	607.25	609.00	610.75	612.50	614.25	616.00	617.75
##	[235]	619.50	621.25	623.00	624.75	626.50	628.25	630.00	631.75	633.50
##	[244]	635.25	637.00	638.75	640.50	642.25	644.00	645.75	647.50	649.25
##	[253]	651.00	652.75	654.50	656.25	658.00	659.75	661.50	663.25	665.00
##	[262]	666.75	668.50	670.25	672.00	673.75	675.50	677.25	679.00	680.75
##	[271]	682.50	684.25	686.00	687.75	689.50	691.25	693.00	694.75	696.50
##	[280]	698.25	700.00	701.75	703.50	705.25	707.00	708.75	710.50	712.25
##	[289]	714.00	715.75	717.50	719.25	721.00	722.75	724.50	726.25	728.00
##	[298]	729.75	731.50	733.25	735.00	736.75	738.50	740.25	742.00	743.75
##	[307]	745.50	747.25	749.00	750.75	752.50	754.25	756.00	757.75	759.50
##	[316]	761.25	763.00	764.75	766.50	768.25	770.00	771.75	773.50	775.25
##	[325]	777.00	778.75	780.50	782.25	784.00	785.75	787.50	789.25	791.00
##	[334]	792.75	794.50	796.25	798.00	799.75	801.50	803.25	805.00	806.75
##	[343]	808.50	810.25	812.00	813.75	815.50	817.25	819.00	820.75	822.50
##	[352]	824.25	826.00	827.75	829.50	831.25	833.00	834.75	836.50	838.25
##	[361]	840.00	841.75	843.50	845.25	847.00	848.75	850.50	852.25	854.00
##	[370]	855.75	857.50	859.25	861.00	862.75	864.50	866.25	868.00	869.75
##	[379]	871.50	873.25	875.00	876.75	878.50	880.25	882.00	883.75	885.50
##	[388]	887.25	889.00	890.75	892.50	894.25	896.00	897.75	899.50	901.25
##	[397]	903.00	904.75	906.50	908.25	910.00	911.75	913.50	915.25	917.00
##	[406]	918.75	920.50	922.25	924.00	925.75	927.50	929.25	931.00	932.75
##	[415]	934.50	936.25	938.00	939.75	941.50	943.25	945.00	946.75	948.50
##	[424]	950.25	952.00	953.75	955.50	957.25	959.00	960.75	962.50	964.25
##	[433]	966.00	967.75	969.50	971.25	973.00	974.75	976.50	978.25	980.00
##	[442]	981.75	983.50	985.25	987.00	988.75	990.50	992.25	994.00	995.75
##	[451]	997.50	999.25	1001.00	1002.75	1004.50	1006.25	1008.00	1009.75	1011.50
##	[460]	1013.25	1015.00	1016.75	1018.50	1020.25	1022.00	1023.75	1025.50	1027.25
##	[469]	1029.00	1030.75	1032.50	1034.25	1036.00	1037.75	1039.50	1041.25	1043.00
##	[478]	1044.75	1046.50	1048.25	1050.00	1051.75	1053.50	1055.25	1057.00	1058.75
##	[487]	1060.50	1062.25	1064.00	1065.75	1067.50	1069.25	1071.00	1072.75	1074.50
##	[496]	1076.25	1078.00	1079.75	1081.50	1083.25	1085.00	1086.75	1088.50	1090.25
##	[505]	1092.00	1093.75	1095.50	1097.25	1099.00	1100.75	1102.50	1104.25	1106.00
##	[514]	1107.75	1109.50	1111.25	1113.00	1114.75	1116.50	1118.25	1120.00	1121.75
##	[523]	1123.50	1125.25	1127.00	1128.75	1130.50	1132.25	1134.00	1135.75	1137.50
##	[532]	1139.25	1141.00	1142.75	1144.50	1146.25	1148.00	1149.75	1151.50	1153.25



```

## [541] 1155.00 1156.75 1158.50 1160.25 1162.00 1163.75 1165.50 1167.25 1169.00
## [550] 1170.75 1172.50 1174.25 1176.00 1177.75 1179.50 1181.25 1183.00 1184.75
## [559] 1186.50 1188.25 1190.00 1191.75 1193.50 1195.25 1197.00 1198.75 1200.50
## [568] 1202.25 1204.00 1205.75 1207.50 1209.25 1211.00 1212.75 1214.50 1216.25
## [577] 1218.00 1219.75 1221.50 1223.25 1225.00 1226.75 1228.50 1230.25 1232.00
## [586] 1233.75 1235.50 1237.25 1239.00 1240.75 1242.50 1244.25 1246.00 1247.75
## [595] 1249.50 1251.25 1253.00 1254.75 1256.50 1258.25 1260.00 1261.75 1263.50
## [604] 1265.25 1267.00 1268.75 1270.50 1272.25 1274.00 1275.75 1277.50 1279.25
## [613] 1281.00 1282.75 1284.50 1286.25 1288.00 1289.75 1291.50 1293.25 1295.00
## [622] 1296.75 1298.50
##
## [[3]]
## [1] 10.00000 10.13731 10.27278 10.40649 10.53850 10.66888 10.79768 10.92497
## [9] 11.05079 11.17520 11.29823 11.41994 11.54036 11.65955 11.77752 11.89433
## [17] 12.01000 12.12456 12.23806 12.35051 12.46194 12.57239 12.68188 12.79043
## [25] 12.89806 13.00481 13.11068 13.21571 13.31991 13.42330 13.52590 13.62773
## [33] 13.72880 13.82914 13.92875 14.02765 14.12586 14.22340 14.32027 14.41648
## [41] 14.51206 14.60702 14.70136 14.79510 14.88825 14.98082 15.07282 15.16427
## [49] 15.25516
##
## [[4]]
## [1] 0.6931472 1.0256831 1.2748040 1.4740763 1.6401611 1.7825505 1.9071693
## [8] 2.0179650 2.1177003 2.2083843 2.2915241 2.3682792 2.4395605 2.5060972
## [15] 2.5684816 2.6272016 2.6826640 2.7352113 2.7851347 2.8326838 2.8780742
## [22] 2.9214935 2.9631058 3.0030554 3.0414702 3.0784637 3.1141373 3.1485821
## [29] 3.1818798 3.2141045 3.2453230 3.2755964 3.3049801 3.3335251 3.3612778
## [36] 3.3882810 3.4145742 3.4401937 3.4651732 3.4895440 3.5133349 3.5365729
## [43] 3.5592832 3.5814891 3.6032126 3.6244743 3.6452932 3.6656876 3.6856743
## [50] 3.7052694 3.7244879 3.7433440 3.7618511 3.7800219 3.7978684 3.8154020
## [57] 3.8326334 3.8495730 3.8662303 3.8826148 3.8987351 3.9145997 3.9302165
## [64] 3.9455932 3.9607370 3.9756549 3.9903535 4.0048392 4.0191180 4.0331958
## [71] 4.0470782 4.0607705 4.0742779 4.0876052 4.1007573 4.1137386 4.1265536
## [78] 4.1392064 4.1517011 4.1640416 4.1762317 4.1882750 4.2001750 4.2119350
## [85] 4.2235583 4.2350481 4.2464073 4.2576390 4.2687459 4.2797309 4.2905964
## [92] 4.3013452 4.3119796 4.3225022 4.3329152 4.3432208 4.3534214 4.3635189
## [99] 4.3735155 4.3834132 4.3932138 4.4029194 4.4125316 4.4220523 4.4314832
## [106] 4.4408261 4.4500824 4.4592538 4.4683419 4.4773482 4.4862740 4.4951209
## [113] 4.5038902 4.5125833 4.5212014 4.5297460 4.5382181 4.5466190 4.5549500
## [120] 4.5632121 4.5714066 4.5795344 4.5875967 4.5955945 4.6035288 4.6114007
## [127] 4.6192111 4.6269610 4.6346513 4.6422829 4.6498567 4.6573736 4.6648343
## [134] 4.6722399 4.6795910 4.6868884 4.6941330 4.7013255 4.7084666 4.7155570
## [141] 4.7225976 4.7295889 4.7365317 4.7434266 4.7502744 4.7570755 4.7638307
## [148] 4.7705405 4.7772057 4.7838267 4.7904042 4.7969386 4.8034307 4.8098809
## [155] 4.8162897 4.8226578 4.8289855 4.8352735 4.8415221 4.8477320 4.8539035
## [162] 4.8600372 4.8661335 4.8721928 4.8782157 4.8842025 4.8901536 4.8960696
## [169] 4.9019507 4.9077975 4.9136103 4.9193895 4.9251355 4.9308487 4.9365294
## [176] 4.9421780 4.9477949 4.9533804 4.9589349 4.9644587 4.9699522 4.9754156
## [183] 4.9808494 4.9862538 4.9916291 4.9969758 5.0022939 5.0075840 5.0128462
## [190] 5.0180808 5.0232882 5.0284687 5.0336224 5.0387497 5.0438508 5.0489261
## [197] 5.0539757 5.0590000 5.0639991 5.0689734 5.0739230 5.0788483 5.0837494
## [204] 5.0886267 5.0934802 5.0983103 5.1031172 5.1079011 5.1126623 5.1174008
## [211] 5.1221170 5.1268111 5.1314833 5.1361337 5.1407626 5.1453701 5.1499566
## [218] 5.1545221 5.1590668 5.1635910 5.1680948 5.1725784 5.1770420 5.1814858
## [225] 5.1859099 5.1903145 5.1946998 5.1990659 5.2034131 5.2077415 5.2120512

```

```

## [232] 5.2163424 5.2206153 5.2248699 5.2291066 5.2333254 5.2375265 5.2417100
## [239] 5.2458760 5.2500248 5.2541565 5.2582711 5.2623689 5.2664500 5.2705144
## [246] 5.2745624 5.2785941 5.2826096 5.2866091 5.2905926 5.2945603 5.2985123
## [253] 5.3024488 5.3063699 5.3102756 5.3141661 5.3180416 5.3219020 5.3257477
## [260] 5.3295786 5.3333949 5.3371967 5.3409841 5.3447572 5.3485161 5.3522609
## [267] 5.3559918 5.3597088 5.3634120 5.3671015 5.3707776 5.3744401 5.3780893
## [274] 5.3817252 5.3853479 5.3889576 5.3925542 5.3961380 5.3997090 5.4032673
## [281] 5.4068130 5.4103461 5.4138668 5.4173751 5.4208712 5.4243551 5.4278269
## [288] 5.4312867 5.4347346 5.4381706 5.4415949 5.4450074 5.4484084 5.4517978
## [295] 5.4551758 5.4585424 5.4618977 5.4652418 5.4685748 5.4718967 5.4752075
## [302] 5.4785075 5.4817966 5.4850749 5.4883425 5.4915995 5.4948459 5.4980817
## [309] 5.5013072 5.5045223 5.5077270 5.5109216 5.5141059 5.5172802 5.5204444
## [316] 5.5235986 5.5267429 5.5298774 5.5330021 5.5361170 5.5392222 5.5423179
## [323] 5.5454040 5.5484806 5.5515477 5.5546055 5.5576540 5.5606932 5.5637232
## [330] 5.5667440 5.5697557 5.5727584 5.5757521 5.5787369 5.5817128 5.5846798
## [337] 5.5876381 5.5905876 5.5935285 5.5964608 5.5993845 5.6022996 5.6052063
## [344] 5.6081046 5.6109944 5.6138760 5.6167493 5.6196143 5.6224712 5.6253199
## [351] 5.6281605 5.6309931 5.6338177 5.6366343 5.6394430 5.6422439 5.6450369
## [358] 5.6478222 5.6505997 5.6533695 5.6561317 5.6588862 5.6616332 5.6643727
## [365] 5.6671047 5.6698292 5.6725463 5.6752561 5.6779586 5.6806537 5.6833416
## [372] 5.6860224 5.6886959 5.6913623 5.6940217 5.6966739 5.6993192 5.7019575
## [379] 5.7045888 5.7072132 5.7098308 5.7124415 5.7150455 5.7176426 5.7202331
## [386] 5.7228168 5.7253939 5.7279644 5.7305283 5.7330856 5.7356364 5.7381807
## [393] 5.7407185 5.7432500 5.7457750 5.7482937 5.7508060 5.7533120 5.7558118
## [400] 5.7583054 5.7607927 5.7632739 5.7657489 5.7682179 5.7706807 5.7731375
## [407] 5.7755883 5.7780331 5.7804719 5.7829048 5.7853317 5.7877528 5.7901681
## [414] 5.7925775 5.7949812 5.7973791 5.7997712 5.8021576 5.8045384 5.8069135
## [421] 5.8092830 5.8116469 5.8140052 5.8163579 5.8187051 5.8210469 5.8233831
## [428] 5.8257139 5.8280393 5.8303593 5.8326740 5.8349832 5.8372872 5.8395859
## [435] 5.8418793 5.8441674 5.8464503 5.8487281 5.8510006 5.8532680 5.8555303
## [442] 5.8577874 5.8600395 5.8622865 5.8645285 5.8667655 5.8689974 5.8712244
## [449] 5.8734465 5.8756636 5.8778758 5.8800832 5.8822856 5.8844833 5.8866761
## [456] 5.8888641 5.8910473 5.8932258 5.8953996 5.8975686 5.8997330 5.9018926
## [463] 5.9040476 5.9061980 5.9083438 5.9104849 5.9126215 5.9147536 5.9168811
## [470] 5.9190041 5.9211226 5.9232366 5.9253461 5.9274512 5.9295519 5.9316482
## [477] 5.9337401
##
## [[5]]
##      [,1] [,2] [,3] [,4] [,5] [,6] [,7]
## [1,]    1    8   15   22   29   36   43
## [2,]    2    9   16   23   30   37   44
## [3,]    3   10   17   24   31   38   45
## [4,]    4   11   18   25   32   39   46
## [5,]    5   12   19   26   33   40   47
## [6,]    6   13   20   27   34   41   48
## [7,]    7   14   21   28   35   42   49
##
## [[6]]
##      [,1] [,2] [,3]
## [1,]  -24   20  -5
## [2,]   18  -15   4
## [3,]    5   -4   1
##
## [[7]]

```

```
##      [,1] [,2] [,3] [,4] [,5]
## [1,]  51  52  53  54  55
## [2,]  56  57  58  59  60
## [3,]  61  62  63  64  65
## [4,]  66  67  68  69  70
## [5,]  71  72  73  74  75
##
## [[8]]
## [1] 0
##
## [[9]]
##      nomes salario tempoemp      setor
## 1 Estevão    1300         1    Compras
## 2   João    1450         2    Compras
## 3   Pedro   1256         1 Logística
## 4   André   1290         1 Logística
## 5   Tiago   1543         2 Marketing
## 6  Filipe   1789         4 Marketing
## 7   Paulo   1799         4         RH
## 8   Tomé    1890         6 Financeiro

typeof(listanova)

## [1] "list"
```