﻿Домашнее задание по математическому практикуму

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# Задание 1. Вычислить значения выражений.

1. >> cos (3\*pi/7)

ans = 0.22252

1. ﻿>> e^-2+sin(3\*pi)^2

ans = 0.13534

1. ﻿>> sqrt(tan(pi\*7/9))

ans = 0.00000 + 0.91602i

1. >> a=3

a = 3

>> b=2.6

b = 2.6000

>> log(2\*b/3)+e

ans = 3.2683

1. >> log2(256)+pow2(a)

ans = 16

1. ﻿>> (12+a)^(1/3)-log(7)/(b+3)

ans = 2.1187

1. ﻿>> sin(3\*pi/8)^2-sqrt(963-27^2)

ans = -14.444

1. ﻿>> log(3)+log10(4)

ans = 1.7007

1. ﻿>> (sin(b)+cos(a+2\*b))/2

ans = 0.088173

1. ﻿>> cos(3\*pi)^3+sqrt(e)+e^-8

ans = 0.64906

1. >> sqrt(sin(5\*pi))+sqrt(abs(cos(5\*pi)))

ans = 1.0000

1. ﻿>> asin(0.73)

ans = 0.81832

1. ﻿>> (abs(a-3)-5\*sqrt(abs(b-2)))/(a+2\*b)

ans = -0.47232

# Задание 2.

## Пункт 1

﻿>> x = -2:0.2:2

x = -2.0000 -1.8000 -1.6000 -1.4000 -1.2000 -1.0000 -0.8000 -0.6000 -0.4000 -0.2000 0.0000 0.2000 0.4000 0.6000 0.8000 1.0000 1.2000 1.4000 1.6000 1.8000 2.0000

>> f=abs(x-1).^2

f = 9.00000 7.84000 6.76000 5.76000 4.84000 4.00000 3.24000 2.56000 1.96000 1.44000 1.00000 0.64000 0.36000 0.16000 0.04000 0.00000 0.04000 0.16000 0.36000 0.64000 1.00000

>> g = cos(3.\*x).^2

g = 0.9219270 0.4028350 0.0076561 0.2403557 0.8041757 0.9800851 0.5437495 0.0516208 0.1313031 0.6811789 1.0000000 0.6811789 0.1313031 0.0516208 0.5437495 0.9800851 0.8041757 0.2403557 0.0076561 0.4028350 0.9219270

﻿>> z = 2.\*x.^3.-3.\*x.^2.+1

z = -27.00000 -20.38400 -14.87200 -10.36800 -6.77600 -4.00000 -1.94400 -0.51200 0.39200 0.86400 1.00000 0.89600 0.64800 0.35200 0.10400 0.00000 0.13600 0.60800 1.51200 2.94400 5.00000

﻿>> f.+g

ans = 9.92193 8.24284 6.76766 6.00036 5.64418 4.98009 3.78375 2.61162 2.09130 2.12118 2.00000 1.32118 0.49130 0.21162 0.58375 0.98009 0.84418 0.40036 0.36766 1.04284 1.92193

## Пункт 2

﻿>> x = -4:0.6:3

x = -4.0000 -3.4000 -2.8000 -2.2000 -1.6000 -1.0000 -0.4000 0.2000 0.8000 1.4000 2.0000 2.6000

>> f = log(abs(x.+5))

f = 0.00000 0.47000 0.78846 1.02962 1.22378 1.38629 1.52606 1.64866 1.75786 1.85630 1.94591 2.02815

>> g=sin(x)+cos(2\*x)

g = 0.611302 1.124939 0.440578 -1.115829 -1.997868 -1.257618 0.307288 1.119730 0.688157 0.043227 0.255654 0.984018

>> z=sqrt(x.^2.+2)

z = 4.2426 3.6824 3.1369 2.6153 2.1354 1.7321 1.4697 1.4283 1.6248 1.9900 2.4495 2.9597

>> f.+g

ans = 0.611302 1.594942 1.229035 -0.086210 -0.774093 0.128677 1.833345 2.768389 2.446014 1.899525 2.201564 3.012166

## Пункт 3

﻿>> x = 2:12

x = 2 3 4 5 6 7 8 9 10 11 12

>> f=log10(x)+1

f = 1.3010 1.4771 1.6021 1.6990 1.7782 1.8451 1.9031 1.9542 2.0000 2.0414 2.0792

>> g = 3\*abs(x-3)

g = 3 0 3 6 9 12 15 18 21 24 27

>> z = (2.\*x.^2)./(5.+x)

z = 1.1429 2.2500 3.5556 5.0000 6.5455 8.1667 9.8462 11.5714 13.3333 15.1250 16.9412

﻿>> f.+g

ans = 4.3010 1.4771 4.6021 7.6990 10.7782 13.8451 16.9031 19.9542 23.0000 26.0414 29.0792