Calcul numeric - temă de laborator

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Enunţ: Capitolul 11, Subcapitolul I, Problema 8

Să se calculeze derivate functiilor in punctul indicat

$$f(x) = x^x + 2x - 6; x_0 = 2$$

Soluţie

$$f = @(x)x^x + 2x - 6$$
$$x = -2 : 0.2 : 2$$
$$x0 = 2$$
$$y = f(x)$$
$$dy = gradient(y, x0)$$

$$dy =$$

Columns 1 through 7

$0.2154 + 0.1020i \quad 0.1739 + 0.1121i \quad 0.0816 + 0.0974i \quad 0.0011 + 0.0060i \quad -0.0018 - 0.1484i \quad 0.1207 - 0.2937i \quad 0.3450 - 0.3230i$

Columns 8 through 14

$0.5532 - 0.1674i \quad 0.5840 + 0.1203i \quad 0.3385 + 0.3430i \quad 0.1021 + 0.2027i \quad 0.1233 + 0.0000i \quad 0.2028 + 0.0000i 0.2358 + 0.0000i$

Columns 15 through 21

$0.2660 + 0.0000i \quad 0.3020 + 0.0000i \quad 0.3504 + 0.0000i \quad 0.4192 + 0.0000i \quad 0.5197 + 0.0000i \quad 0.6697 + 0.0000i 0.7597 + 0.0000i$

Observaţii

```
f = @(x) x.^x + 2 * x - 6;
x = -2:0.2:2;
x0 = 2;
y = f(x);
dy = gradient(y, x0)
```

```
dy =

  Columns 1 through 14

   0.2154 + 0.1020i   0.1739 + 0.1121i   0.0816 + 0.0974i   0.0011 + 0.0060i  -0.0018 - 0.14

  Columns 15 through 21

   0.2660 + 0.0000i   0.3020 + 0.0000i   0.3504 + 0.0000i   0.4192 + 0.0000i   0.5197 + 0.00
```