**Numerické cvičení č. 2 z předmětu PV 193** – autorské řešení

Demonstrujte aritmetické dělení bez obnovy zbytku

**A** (dělenec) **= 182**

**B** (dělitel) **= 9**

**n** (šířka slova) **= 9 číslic**

128+32+16+4+2 8+1

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *dělitel* | | | | | | | | | |  |
| 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | +9 |
| 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | -9 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *D dílčí zbytek dělence* | | | | | | | | | |  | R podíl/A dělenec | | | | | | | | |
| *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* |  | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | D:=0 |
| *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* |  | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | posun spojeného registru DA vlevo |
| 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |  |  |  |  |  |  |  |  |  |  | -B |
| *1* | *1* | *1* | *1* | *1* | *1* | *0* | *1* | *1* | *1* |  | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | D:=D-B, záporné znaménko |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *1* | *1* | *1* | *1* | *1* | *0* | *1* | *1* | *1* | *1* |  | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | *0* | posun registru DA vlevo, A0:= -Dsign |
| 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |  |  |  |  |  |  |  |  |  |  | +B |
| *1* | *1* | *1* | *1* | *1* | *1* | *1* | *0* | *0* | *0* |  | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | *0* | D:=D+B, záporné znaménko |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *1* | *1* | *1* | *1* | *1* | *1* | *0* | *0* | *0* | 0 |  | 1 | 1 | 0 | 1 | 1 | 0 | 0 | *0* | *0* | posun registru DA vlevo, A0:= -Dsign |
| 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |  |  |  |  |  |  |  |  |  |  | +B |
| *1* | *1* | *1* | *1* | *1* | *1* | *1* | *0* | *0* | *1* |  | 1 | 1 | 0 | 1 | 1 | 0 | 0 | *0* | *0* | D:=D+B, záporné znaménko |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *1* | *1* | *1* | *1* | *1* | *1* | *0* | *0* | *1* | 1 |  | 1 | 0 | 1 | 1 | 0 | 0 | *0* | *0* | *0* | posun registru DA vlevo, A0:= -Dsign |
| 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |  |  |  |  |  |  |  |  |  |  | +B |
| *1* | *1* | *1* | *1* | *1* | *1* | *1* | *1* | *0* | *0* |  | 1 | 0 | 1 | 1 | 0 | 0 | *0* | *0* | *0* | D:=D+B, záporné znaménko |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *1* | *1* | *1* | *1* | *1* | *1* | *1* | *0* | *0* | *1* |  | 0 | 1 | 1 | 0 | 0 | *0* | *0* | *0* | *0* | posun registru DA vlevo, A0:=-Dsign |
| 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |  |  |  |  |  |  |  |  |  |  | +B |
| *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *1* | *0* |  | 0 | 1 | 1 | 0 | 0 | *0* | *0* | *0* | *1* | *D:=D+B, kladné znaménko* |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *0* | *0* | *0* | *0* | *0* | *0* | *0* | *1* | *0* | *0* |  | 1 | 1 | 0 | 0 | *0* | *0* | *0* | *1* | *0* | *posun registru DA vlevo, A0:=-Dsign* |
| 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |  |  |  |  |  |  |  |  |  |  | -B |
| *1* | *1* | *1* | *1* | *1* | *1* | *1* | *0* | *10* | *1* |  | 1 | 1 | 0 | 0 | *0* | *0* | *0* | *1* | *0* | *D:=D-B, záporné znaménko* |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *1* | *1* | *1* | *1* | *1* | *1* | *0* | *10* | *1* | 1 |  | 1 | 0 | 0 | *0* | *0* | *0* | *1* | *0* | *0* | *posun registru DA vlevo, A0:=-Dsign* |
| 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |  |  |  |  |  |  |  |  |  |  | +B |
| *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* |  | 1 | 0 | 0 | *0* | *0* | *0* | *1* | *0* | *1* | D:=D-B, kladné znaménko |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | 1 |  | 0 | 0 | *0* | *0* | *0* | *1* | *0* | *1* | *0* | *posun registru DA vlevo, A0:=-Dsign* |
| 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |  |  |  |  |  |  |  |  |  |  | -B |
| *1* | *1* | *1* | *1* | *1* | *1* | *1* | *0* | *0* | *0* |  | 0 | 0 | *0* | *0* | *0* | *1* | *0* | *1* | *0* | *D:=D-B, záporné znaménko* |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *1* | *1* | *1* | *1* | *1* | *1* | *0* | *0* | *0* | 0 |  | 0 | *0* | *0* | *0* | *1* | *0* | *1* | *0* | *0* | *posun registru DA vlevo, A0:=-Dsign* |
| 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |  |  |  |  |  |  |  |  |  |  | +B |
| *1* | *1* | *1* | *1* | *1* | *1* | *1* | *0* | *0* | *1* |  | 0 | *0* | *0* | *0* | *1* | *0* | *1* | *0* | *0* | *D:=D+B, záporné znaménko* |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *1* | *1* | *1* | *1* | *1* | *1* | *1* | *0* | *0* | *1* |  |  |  |  |  |  |  |  |  |  | *záporné znaménko - nutno korigovat* |
| 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |  |  |  |  |  |  |  |  |  |  | *+B* |
| *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *1* | *0* |  |  |  |  |  |  |  |  |  |  |  |
|  | | | | | | | | | |  |  | | | | | | | | |  |
| *D zbytek = +2*  *A podíl = +8* | | | | | | | | | |  | *A podíl = +20* | | | | | | | | |  |