Příklad pro samostatnou přípravu č. 2

Konstrukce číslicových systémů – PV 170

**Úloha č. 1:**

Převeďte dekadická čísla **A = 60d** a **B= 7d** do binární číselné soustavy a pomocí algoritmu s obnovováním zbytku vypočtěte podíl čísel A/B.

Pro výpočet můžete použít následující tabulku:

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| *B= , n=6* | | | | | | |
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| *D zbytek* | | | | | | |  | *A dělenec* | | | | | |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | *D:=0* |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | *i:=0* | *posun spojené proměnné D-A vlevo* |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | *-B* |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | *D:=D-B,* |
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|  |  |  |  |  |  |  |  |  |  |  |  |  |  | *i:=1* | *posun spojené proměnné D-A vlevo, A0= -D7* |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | *-B* |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | *D:=D-B,* |
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|  |  |  |  |  |  |  |  |  |  |  |  |  |  | *i:=2* | *posun spojené proměnné D-A vlevo, A0:= -D7* |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | *-B* |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | *D:=D-B,* |
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|  |  |  |  |  |  |  |  |  |  |  |  |  |  | *i:=3* | *posun spojené proměnné D-A vlevo, A0:= -D7* |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | *-B* |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | *D:=D-B,* |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  | *i:=4* | *posun spojené proměnné D-A vlevo, A0:= -D7* |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | *-B* |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | *D:=D-B,* |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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|  |  |  |  |  |  |  | |  |  |  |  |  |  |  | *i:=5* | *posun spojené proměnné D-A vlevo, A0:= -D7* |
|  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | *-B* |
|  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | *D:=D-B,* |
|  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | *A0= -D7* |
| *D zbytek = +* | | | | | | |  | *A podíl = +* | | | | | |

**Úloha č. 2:**

Dokažte platnost následujících zákonů Booleovy algebry

1. a + (b \* c) = (a + b) \* (a + c)
2. **a + a \* b = a + b**