

Lista 5

5.1 Obliczyć

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|----------------------------|----------------------------|
| (1) $\text{ord}_5 2 =$ | (6) $\text{ord}_{10} 3 =$ |
| (2) $\text{ord}_{13} 10 =$ | (7) $\text{ord}_{10} 7 =$ |
| (3) $\text{ord}_{11} 3 =$ | (8) $\text{ord}_{17} 2 =$ |
| (4) $\text{ord}_{21} 10 =$ | (9) $\text{ord}_{25} 9 =$ |
| (5) $\text{ord}_{13} 5 =$ | (10) $\text{ord}_{13} 7 =$ |

5.2 Znaleźć wszystkie pierwiastki pierwotne modulo:

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| (1) 4 | (2) 5 | (3) 10 |
| (4) 13 | (5) 14 | (6) 18 |

5.3 Pokazać, że nie istnieją pierwiastki pierwotne modulo:

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| (1) 12 | (2) 20 |
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5.4 Obliczyć

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| (1) $2^{6754} \bmod 1155 =$ | (2) $2^{87604} \bmod 1155 =$ |
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5.5 Obliczyć

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| (1) $7^{9876} \bmod 60 =$ | (2) $7^{8967} \bmod 60 =$ |
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5.6 Obliczyć

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| (1) $2^{45632} \bmod 12155 =$ | (2) $3^{54652} \bmod 12155 =$ |
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