

ŠTATISTICKÉ SPRACOVANIE ÚDAJOV

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Tabuľky rozdelenia početnosti

absolútna početnosť:

| | | | | | |
|---------------------|---|---|---|---|---|
| známka z matematiky | 1 | 2 | 3 | 4 | 5 |
| počet žiakov | 3 | 4 | 5 | 2 | 1 |

| | | | | | |
|-----------------|---|---|---|---|---|
| známka z chémie | 1 | 2 | 3 | 4 | 5 |
| počet žiakov | 2 | 6 | 4 | 3 | 0 |

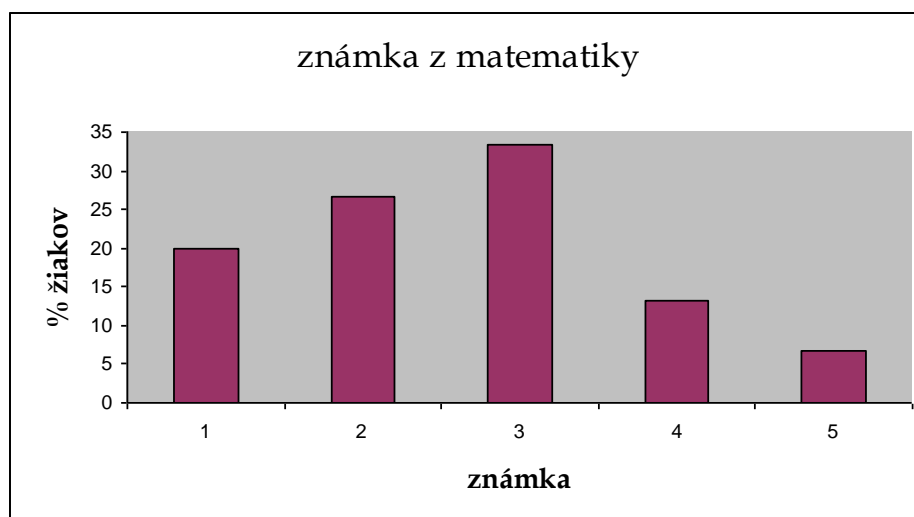
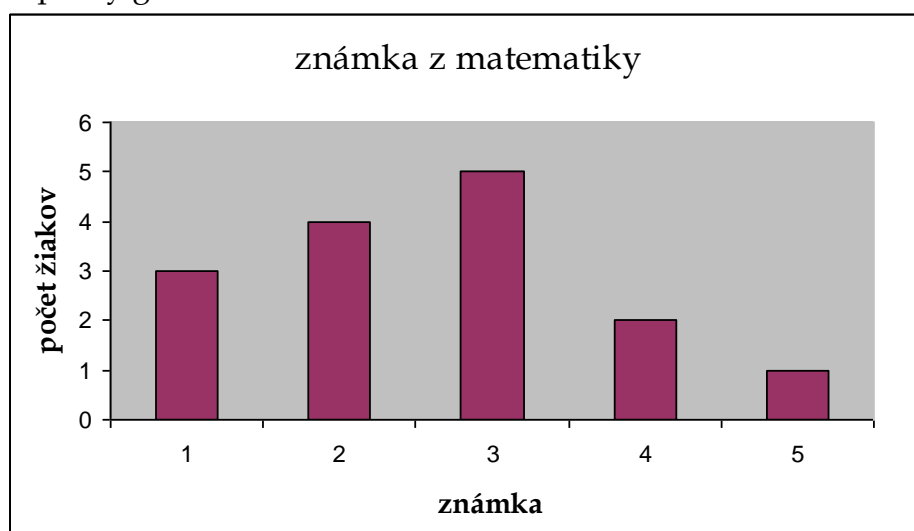
relatívna početnosť:

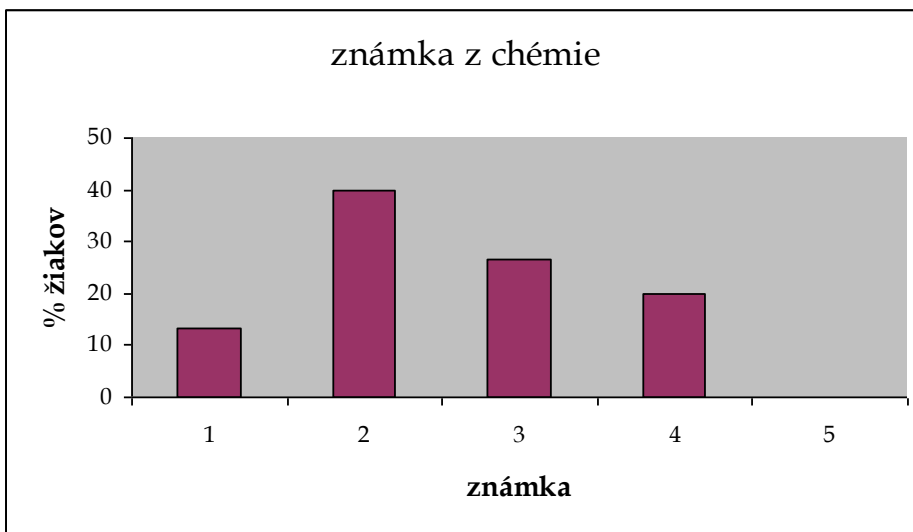
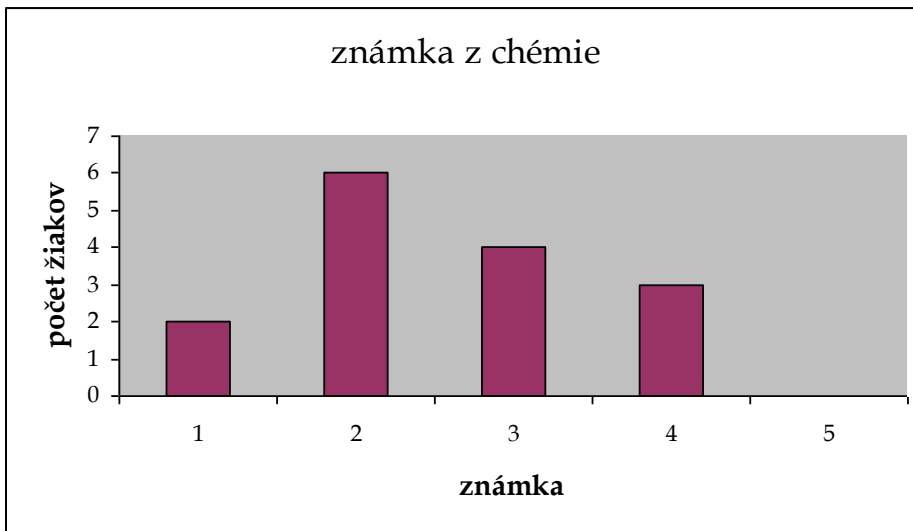
| | | | | | |
|---------------------|----|------|------|------|------|
| známka z matematiky | 1 | 2 | 3 | 4 | 5 |
| % žiakov | 20 | 26,6 | 33,3 | 13,3 | 6,66 |

| | | | | | |
|-----------------|------|----|------|----|---|
| známka z chémie | 1 | 2 | 3 | 4 | 5 |
| % žiakov | 13,3 | 40 | 26,6 | 20 | 0 |

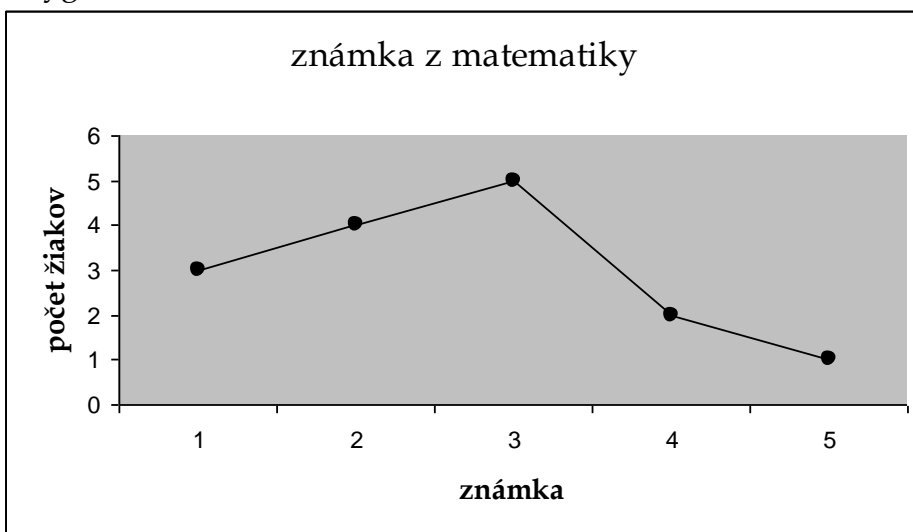
Grafy

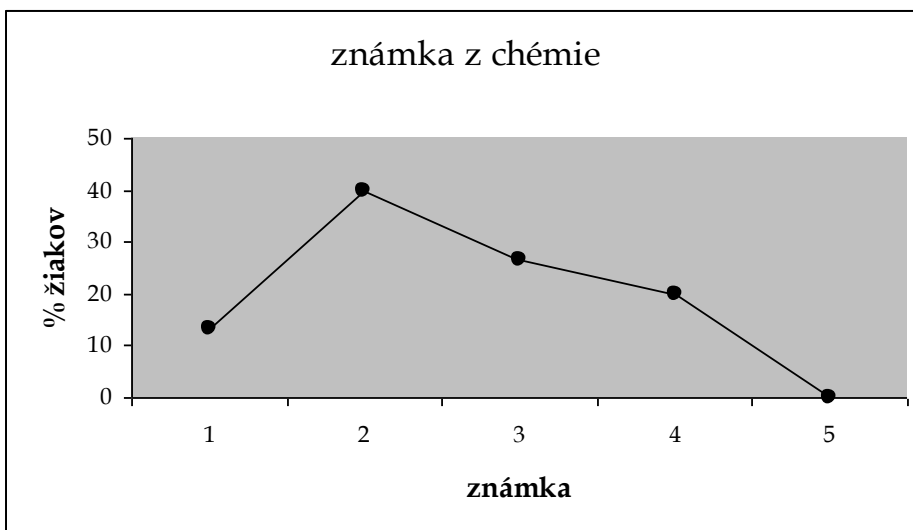
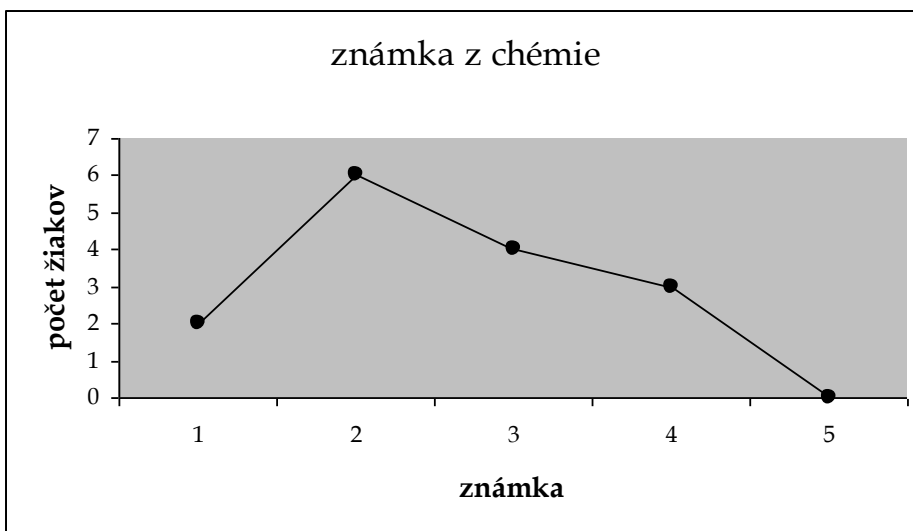
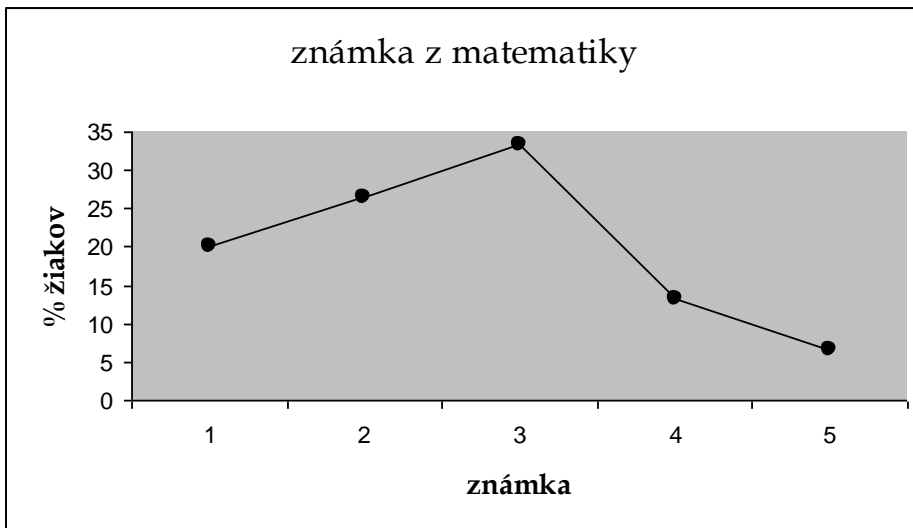
Stĺpcový graf:



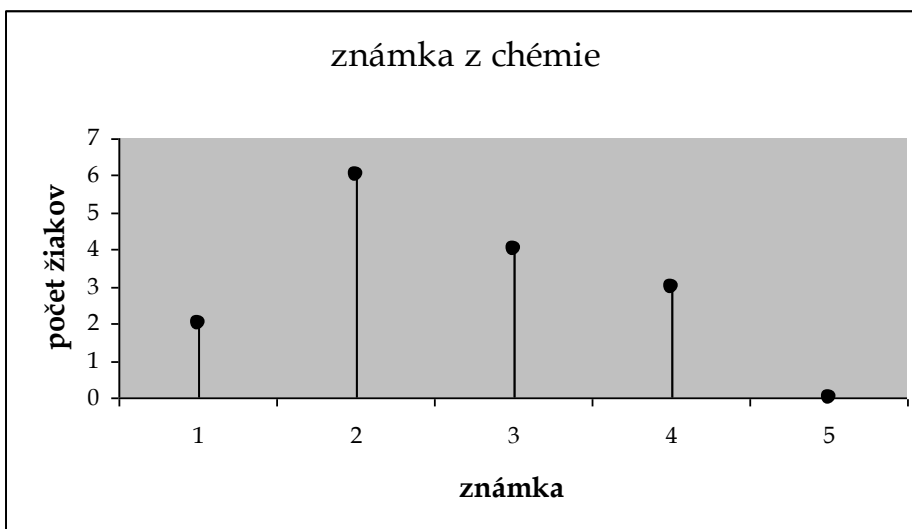
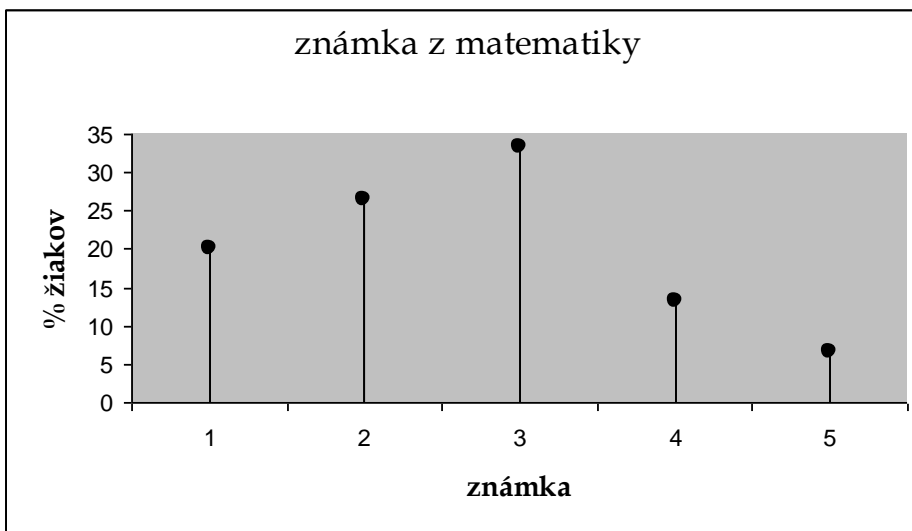
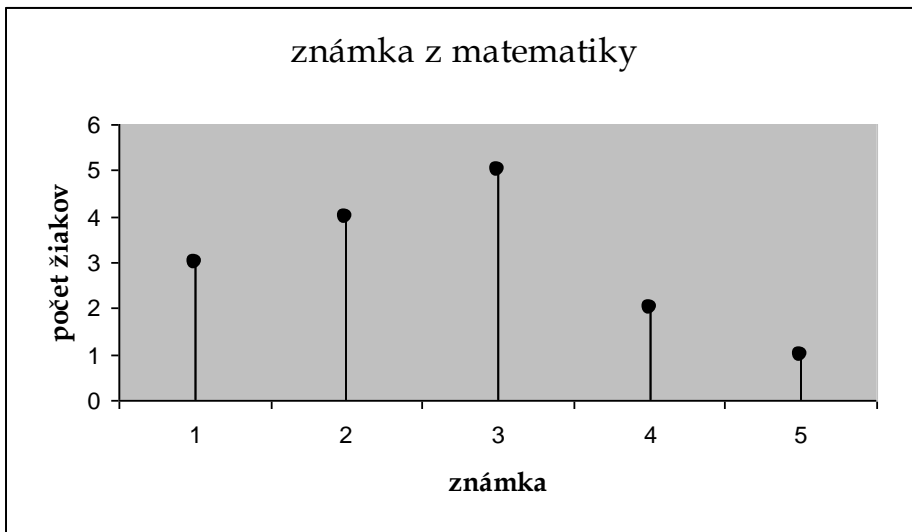


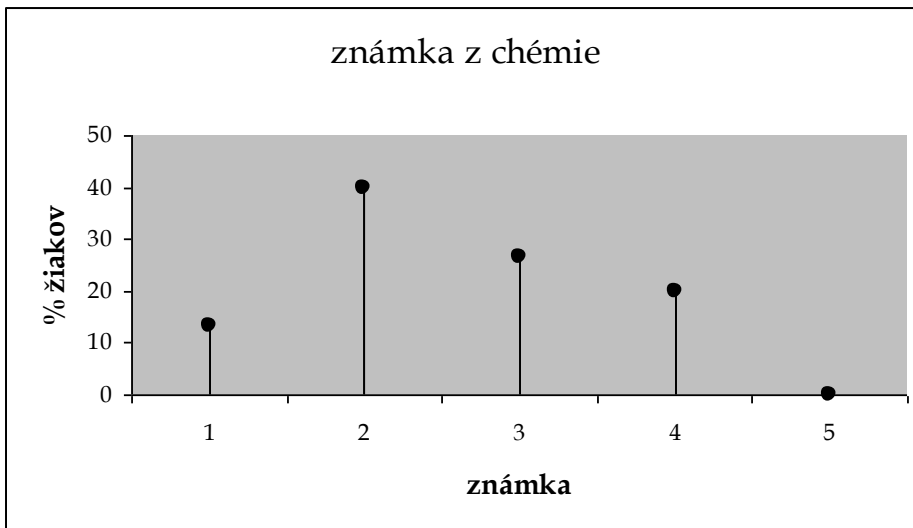
Polygón:



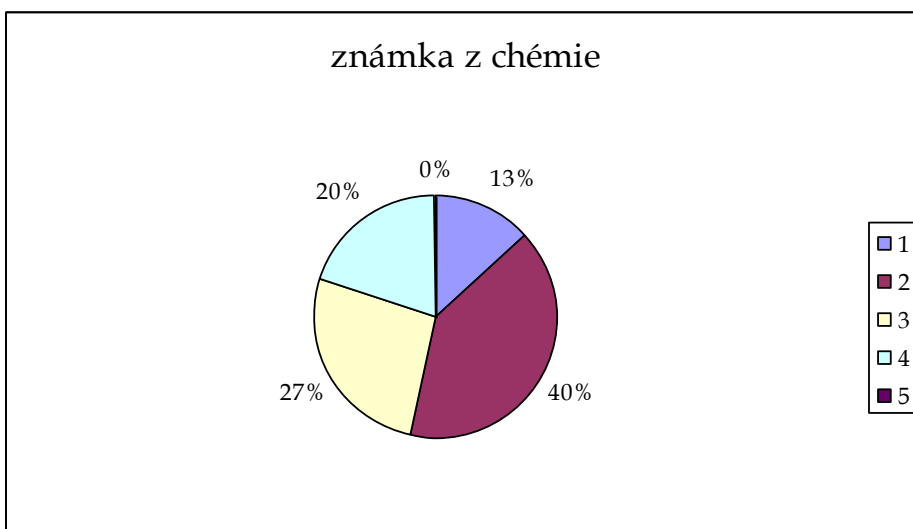
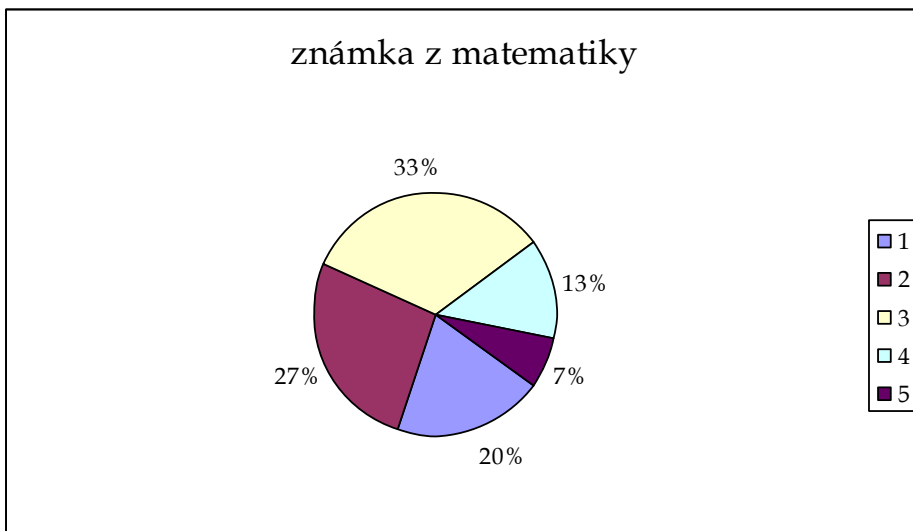


Histogram:





Kruhový:



Opis štatistického súboru pomocou štatistických charakteristík

z_m - známka z matematiky

z_{ch} - známka z chémie

\bar{z}_m - priemerná známka z matematiky

\bar{z}_{ch} - priemerná známka z chémie

| žiak | z_m | z_{ch} | $z_m - \bar{z}_m$ | $(z_m - \bar{z}_m)^2$ | $z_{ch} - \bar{z}_{ch}$ | $(z_{ch} - \bar{z}_{ch})^2$ | $(z_m - \bar{z}_m) * (z_{ch} - \bar{z}_{ch})$ |
|----------|-------|----------|-------------------|-----------------------|-------------------------|-----------------------------|---|
| A | 1 | 3 | -1,6 | 2,56 | 0,47 | 0,22 | -0,75 |
| B | 1 | 2 | -1,6 | 2,56 | -0,53 | 0,28 | 0,85 |
| C | 2 | 1 | -0,6 | 0,36 | -1,53 | 2,35 | 0,92 |
| D | 2 | 2 | -0,6 | 0,36 | -0,53 | 0,28 | 0,32 |
| E | 3 | 1 | 0,4 | 0,16 | -1,53 | 2,35 | -0,61 |
| F | 4 | 4 | 1,4 | 1,96 | 1,47 | 2,15 | 2,05 |
| G | 5 | 4 | 2,4 | 5,76 | 1,47 | 2,15 | 3,52 |
| H | 4 | 3 | 1,4 | 1,96 | 0,47 | 0,22 | 0,65 |
| I | 3 | 2 | 0,4 | 0,16 | -0,53 | 0,28 | -0,21 |
| J | 3 | 4 | 0,4 | 0,16 | 1,47 | 2,15 | 0,59 |
| K | 3 | 3 | 0,4 | 0,16 | 0,47 | 0,22 | 0,19 |
| L | 2 | 2 | -0,6 | 0,36 | -0,53 | 0,28 | 0,32 |
| M | 3 | 3 | 0,4 | 0,16 | 0,47 | 0,22 | 0,19 |
| N | 2 | 2 | -0,6 | 0,36 | -0,53 | 0,28 | 0,32 |
| O | 1 | 2 | -1,6 | 2,56 | -0,53 | 0,28 | 0,85 |
| Σ | | | | 19,6 | | 13,73 | 9,20 |

$$\bar{z}_m = 2,6$$

$$\bar{z}_{ch} = 2,53$$

$$\text{mod}(z_m) = 3$$

$$\text{mod}(z_{ch}) = 2$$

$$\text{med}(z_m) = 3$$

$$\text{med}(z_{ch}) = 2$$

$$s_{z_m}^2 = 1,31$$

$$s_{z_{ch}}^2 = 0,92$$

$$s_{z_m} = 1,14$$

$$s_{z_{ch}} = 0,96$$

$$s_{z_m, z_{ch}}^2 = 0,61$$

$r_{z_m, z_{ch}} = 0,56 \rightarrow$ závislosť medzi známkami z matematiky a chémie je mierna závislosť

\rightarrow čím lepšia známka z matematiky tým lepšia známka z chémie

a naopak

\rightarrow závislosť je kladná