Kruskal-Wallis-Test

Stufe 1: H aus den Rangsummen

Name: _____ Datum: _____

H = 12 : (N(N + 1)) · Summe R_j² : n_j – 3(N + 1). Ergebnis auf 2 Nachkommastellen.

1) $n_1 = 6,\ n_2 = 4,\ n_3 = 4;\ R_1 = 21,\ R_2 = 38,\ R_3 = 46.$ *H*? _____

2) $n_1 = 6,\ n_2 = 4,\ n_3 = 4;\ R_1 = 24,\ R_2 = 37,\ R_3 = 44.$ *H*? _____

3) $n_1 = 5,\ n_2 = 7,\ n_3 = 6;\ R_1 = 41,\ R_2 = 72,\ R_3 = 58.$ *H*? _____

4) $n_1 = 7,\ n_2 = 7,\ n_3 = 7;\ R_1 = 34,\ R_2 = 78,\ R_3 = 119.$ *H*? _____

5) $n_1 = 7,\ n_2 = 5,\ n_3 = 4;\ R_1 = 58,\ R_2 = 44,\ R_3 = 34.$ *H*? _____

6) $n_1 = 7,\ n_2 = 4,\ n_3 = 5;\ R_1 = 35,\ R_2 = 43,\ R_3 = 58.$ *H*? _____

7) $n_1 = 4,\ n_2 = 4,\ n_3 = 5;\ R_1 = 26,\ R_2 = 33,\ R_3 = 32.$ *H*? _____

8) $n_1 = 4,\ n_2 = 6,\ n_3 = 5;\ R_1 = 23,\ R_2 = 54,\ R_3 = 43.$ *H*? _____

9) $n_1 = 7,\ n_2 = 4,\ n_3 = 6;\ R_1 = 64,\ R_2 = 39,\ R_3 = 50.$ *H*? _____

10) $n_1 = 7,\ n_2 = 4,\ n_3 = 5;\ R_1 = 51,\ R_2 = 33,\ R_3 = 52.$ *H*? _____

11) $n_1 = 4,\ n_2 = 6,\ n_3 = 7;\ R_1 = 44,\ R_2 = 48,\ R_3 = 61.$ *H*? _____

12) $n_1 = 5,\ n_2 = 6,\ n_3 = 7;\ R_1 = 46,\ R_2 = 37,\ R_3 = 88.$ *H*? _____

13) $n_1 = 6,\ n_2 = 5,\ n_3 = 4;\ R_1 = 24,\ R_2 = 45,\ R_3 = 51.$ *H*? _____

14) $n_1 = 5,\ n_2 = 5,\ n_3 = 6;\ R_1 = 38,\ R_2 = 19,\ R_3 = 79.$ *H*? _____

15) $n_1 = 7,\ n_2 = 5,\ n_3 = 4;\ R_1 = 49,\ R_2 = 40,\ R_3 = 47.$ *H*? _____

16) $n_1 = 6,\ n_2 = 5,\ n_3 = 7;\ R_1 = 23,\ R_2 = 49,\ R_3 = 99.$ *H*? _____

17) $n_1 = 5,\ n_2 = 7,\ n_3 = 5;\ R_1 = 29,\ R_2 = 60,\ R_3 = 64.$ *H*? _____

Lösungen: Kruskal-Wallis-Test

Stufe 1: H aus den Rangsummen

1) $N = 14;\ H = \frac{12}{14 \cdot 15}\left(\frac{21^2}{6} + \frac{38^2}{4} + \frac{46^2}{4}\right) - 3 \cdot 15 \approx 10{,}06$

2) $N = 14;\ H = \frac{12}{14 \cdot 15}\left(\frac{24^2}{6} + \frac{37^2}{4} + \frac{44^2}{4}\right) - 3 \cdot 15 \approx 7{,}7$

3) $N = 18;\ H = \frac{12}{18 \cdot 19}\left(\frac{41^2}{5} + \frac{72^2}{7} + \frac{58^2}{6}\right) - 3 \cdot 19 \approx 0{,}45$

4) $N = 21;\ H = \frac{12}{21 \cdot 22}\left(\frac{34^2}{7} + \frac{78^2}{7} + \frac{119^2}{7}\right) - 3 \cdot 22 \approx 13{,}41$

5) $N = 16;\ H = \frac{12}{16 \cdot 17}\left(\frac{58^2}{7} + \frac{44^2}{5} + \frac{34^2}{4}\right) - 3 \cdot 17 \approx 0{,}03$

6) $N = 16;\ H = \frac{12}{16 \cdot 17}\left(\frac{35^2}{7} + \frac{43^2}{4} + \frac{58^2}{5}\right) - 3 \cdot 17 \approx 6{,}8$

7) $N = 13;\ H = \frac{12}{13 \cdot 14}\left(\frac{26^2}{4} + \frac{33^2}{4} + \frac{32^2}{5}\right) - 3 \cdot 14 \approx 0{,}6$

8) $N = 15;\ H = \frac{12}{15 \cdot 16}\left(\frac{23^2}{4} + \frac{54^2}{6} + \frac{43^2}{5}\right) - 3 \cdot 16 \approx 1{,}4$

9) $N = 17;\ H = \frac{12}{17 \cdot 18}\left(\frac{64^2}{7} + \frac{39^2}{4} + \frac{50^2}{6}\right) - 3 \cdot 18 \approx 0{,}2$

10) $N = 16;\ H = \frac{12}{16 \cdot 17}\left(\frac{51^2}{7} + \frac{33^2}{4} + \frac{52^2}{5}\right) - 3 \cdot 17 \approx 1{,}26$

11) $N = 17;\ H = \frac{12}{17 \cdot 18}\left(\frac{44^2}{4} + \frac{48^2}{6} + \frac{61^2}{7}\right) - 3 \cdot 18 \approx 0{,}89$

12) $N = 18;\ H = \frac{12}{18 \cdot 19}\left(\frac{46^2}{5} + \frac{37^2}{6} + \frac{88^2}{7}\right) - 3 \cdot 19 \approx 4{,}67$

13) $N = 15;\ H = \frac{12}{15 \cdot 16}\left(\frac{24^2}{6} + \frac{45^2}{5} + \frac{51^2}{4}\right) - 3 \cdot 16 \approx 9{,}56$

14) $N = 16;\ H = \frac{12}{16 \cdot 17}\left(\frac{38^2}{5} + \frac{19^2}{5} + \frac{79^2}{6}\right) - 3 \cdot 17 \approx 10{,}82$

15) $N = 16;\ H = \frac{12}{16 \cdot 17}\left(\frac{49^2}{7} + \frac{40^2}{5} + \frac{47^2}{4}\right) - 3 \cdot 17 \approx 2{,}61$

16) $N = 18;\ H = \frac{12}{18 \cdot 19}\left(\frac{23^2}{6} + \frac{49^2}{5} + \frac{99^2}{7}\right) - 3 \cdot 19 \approx 12{,}07$

17) $N = 17;\ H = \frac{12}{17 \cdot 18}\left(\frac{29^2}{5} + \frac{60^2}{7} + \frac{64^2}{5}\right) - 3 \cdot 18 \approx 4{,}89$