

Fördergruppe Mathematik * Jahrgangsstufe 7 * 14. Dezember 2005

1. Finde die folgenden Terme und ergänze die Tabelle

| | | | | | | | | |
|---------------|----------------|----------------|----------------|----------------|----------------|-----|-----|-----|
| x | 1 | 2 | 3 | 4 | 5 | 20 | -10 | 2,5 |
| $T_1(x) =$ | 2 | 4 | 6 | 8 | | | | |
| $T_2(x) =$ | 1 | 3 | 5 | 7 | | | | |
| $T_3(x) =$ | 6 | 11 | 16 | 21 | | | | |
| $T_4(x) =$ | 5 | 12 | 19 | 26 | 33 | | | |
| $T_5(x) =$ | 97 | 94 | 91 | 88 | | | | |
| $T_6(x) =$ | 1 | 4 | 9 | 16 | | | | |
| $T_7(x) =$ | 0 | 3 | 8 | 15 | 24 | | | |
| $T_8(x) =$ | 2 | 6 | 12 | 20 | 30 | | | |
| $T_9(x) =$ | 0,5 | 2 | 4,5 | 8 | 12,5 | | | |
| $T_{10}(x) =$ | 0 | 1 | 4 | 9 | 16 | | | |
| $T_{11}(x) =$ | 4 | 1 | 0 | 1 | 4 | 289 | | |
| $T_{12}(x) =$ | 1 | 7 | 17 | 31 | 49 | | | |
| $T_{13}(x) =$ | 2 | $2\frac{1}{2}$ | $3\frac{1}{3}$ | $4\frac{1}{4}$ | $5\frac{1}{5}$ | | | |
| $T_{14}(x) =$ | $1\frac{1}{2}$ | $3\frac{1}{2}$ | $5\frac{2}{3}$ | $7\frac{3}{4}$ | $9\frac{4}{5}$ | | | |
| $T_{15}(x) =$ | 2 | 1 | 2 | 5 | 10 | 325 | | |

2. Ergänze jeweils die Tabelle! Um die passenden Werte für x zu finden, musst du Gleichungen lösen können!

| | | | | | | | | |
|--------------------------|---|-----|----------------|----|----|------|----------------|----------------|
| x | 1 | 2,5 | $3\frac{1}{3}$ | | | | | |
| $T_3(x) = 2 \cdot x + 3$ | | | | 17 | 21 | - 27 | $3\frac{1}{3}$ | $6\frac{1}{3}$ |

| | | | | | | | | |
|---------------------------------|---|-----|----------------|------|----|-------|----|----------------|
| x | 1 | 2,5 | $3\frac{1}{3}$ | | | | | |
| $T_1(x) = (5 - x) \cdot 3 - 10$ | | | | - 10 | 20 | - 5,5 | -2 | $4\frac{4}{7}$ |

| | | | | | | | | |
|-----------------------------|---|-----|----------------|---|-----|---|----|-----------------|
| x | 1 | 2,5 | $3\frac{1}{3}$ | | | | | |
| $T_2(x) = (3x - 4) : 5 + 6$ | | | | 7 | 7,6 | 1 | -2 | $-6\frac{1}{3}$ |

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| | | | | | | | | |
|--|----------------|----------------|----------------|----------------|----------------|-------------------|-------------------|-------|
| x | 1 | 2 | 3 | 4 | 5 | 20 | -10 | 2,5 |
| $T_1(x) = 2x$ | 2 | 4 | 6 | 8 | 10 | 40 | -20 | 5 |
| $T_2(x) = 2x - 1$ | 1 | 3 | 5 | 7 | 9 | 39 | -21 | 4 |
| $T_3(x) = 5x + 1$ | 6 | 11 | 16 | 21 | 26 | 101 | -49 | 8,5 |
| $T_4(x) = 7x - 2$ | 5 | 12 | 19 | 26 | 33 | 138 | -72 | 15,5 |
| $T_5(x) = 100 - 3x$ | 97 | 94 | 91 | 88 | 85 | 40 | 130 | 92,5 |
| $T_6(x) = x^2$ | 1 | 4 | 9 | 16 | 25 | 400 | 100 | 6,25 |
| $T_7(x) = x^2 - 1 = (x-1) \cdot (x+1)$ | 0 | 3 | 8 | 15 | 24 | 399 | 99 | 5,25 |
| $T_8(x) = x \cdot (x+1) = x^2 + x$ | 2 | 6 | 12 | 20 | 30 | 420 | 90 | 8,75 |
| $T_9(x) = x^2 : 2$ | 0,5 | 2 | 4,5 | 8 | 12,5 | 200 | 50 | 3,125 |
| $T_{10}(x) = (x - 1)^2$ | 0 | 1 | 4 | 9 | 16 | 361 | 121 | 2,25 |
| $T_{11}(x) = (3 - x)^2 = (x - 3)^2$ | 4 | 1 | 0 | 1 | 4 | 289 | 169 | 0,25 |
| $T_{12}(x) = 2 \cdot x^2 - 1$ | 1 | 7 | 17 | 31 | 49 | 799 | 199 | 5,25 |
| $T_{13}(x) = x + \frac{1}{x}$ | 2 | $2\frac{1}{2}$ | $3\frac{1}{3}$ | $4\frac{1}{4}$ | $5\frac{1}{5}$ | $20\frac{1}{20}$ | $-10\frac{1}{10}$ | 2,9 |
| $T_{14}(x) = 2x - \frac{1}{x}$ | $1\frac{1}{2}$ | $3\frac{1}{2}$ | $5\frac{2}{3}$ | $7\frac{3}{4}$ | $9\frac{4}{5}$ | $39\frac{19}{20}$ | $-20\frac{1}{10}$ | 4,6 |
| $T_{15}(x) = (x - 2)^2 + 1$ | 2 | 1 | 2 | 5 | 10 | 325 | 145 | 1,25 |

2. Ergänze jeweils die Tabelle! Um die passenden Werte für x zu finden, musst du Gleichungen lösen können!

| | | | | | | | | |
|--------------------------|---|-----|----------------|----|----|-----|----------------|----------------|
| x | 1 | 2,5 | $3\frac{1}{3}$ | 7 | 9 | -15 | $\frac{1}{6}$ | $2\frac{2}{3}$ |
| $T_3(x) = 2 \cdot x + 3$ | 5 | 8 | $9\frac{2}{3}$ | 17 | 21 | -27 | $3\frac{1}{3}$ | $6\frac{1}{3}$ |

| | | | | | | | | |
|---------------------------------|---|------|----------------|-----|----|------|----------------|----------------|
| x | 1 | 2,5 | $3\frac{1}{3}$ | 5 | -5 | 3,5 | $2\frac{1}{3}$ | $\frac{1}{7}$ |
| $T_1(x) = (5 - x) \cdot 3 - 10$ | 2 | -2,5 | -5 | -10 | 20 | -5,5 | -2 | $4\frac{4}{7}$ |

| | | | | | | | | |
|-----------------------------|-----|-----|----------------|---|-----|----|-----|------------------|
| x | 1 | 2,5 | $3\frac{1}{3}$ | 3 | 4 | -7 | -12 | $-19\frac{2}{9}$ |
| $T_2(x) = (3x - 4) : 5 + 6$ | 5,8 | 6,7 | 7,2 | 7 | 7,6 | 1 | -2 | $-6\frac{1}{3}$ |