

نام و نام خانوادگی: شماره کلاس: پاسخنامه تشریحی تکلیف شماره ۱۷۵

$$t_1: (1 \times 1) + \frac{1 \times 1}{1} \quad t_2: (2 \times 2) + \frac{2 \times 2}{2} \quad t_f: (f \times f) + \frac{f \times f}{f}$$

$$t_1 = (1 \times 1) + \frac{1 \times 1}{1} = 1 + 1 = 2 \quad \checkmark$$

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$$t_1: \frac{1 \times 1}{1} \quad t_2: \frac{2 \times 2}{2} \quad t_3: \frac{3 \times 3}{3} \quad t_f: \frac{f \times f}{f}$$

$$\frac{((n-1)n)}{1} = 20$$

$$(n-1)n = 20$$

$$n = 5 \quad \checkmark$$

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$$t_1: 1 \quad t_2: 2 \quad t_3: 3 \quad t_f: f \quad t_{11}: 11$$

$$f_{f+1} = f_{11} = 11 \quad \checkmark$$

$$f_{f+1} = f_{11} = 11 \quad \checkmark$$

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$$t_1: \frac{-1}{1} = -1 \quad t_2: \frac{1}{2} \quad t_3: \frac{-1}{3} \quad t_f: \frac{1}{f} \quad t_5: \frac{-1}{5}$$

$$\max - \min \Rightarrow \frac{1}{2} + 1 = \frac{3}{2} \quad \checkmark$$

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$$(-2)^3 - 21 = -8 - 21 = -29$$

$$-2k + 22 = -29$$

$$-2k = -51$$

$$k = 25.5 \quad \checkmark$$

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$10a + b - (Va + b) = 12$ $a = 7$ $4a + b - (a + b) = 5a$ $\frac{12}{5a} = \frac{12}{5 \cdot 7}$ ✓	6
$4a + b = 12$ $10a + b = 12$ $a + b = 7$ $4a + b = 11$ $3a = 4$ $a = \frac{4}{3}$ $b = -\frac{10}{3}$ $b_n = 4n - \frac{10}{3}$ ✓	7
$\frac{12}{5} > \frac{4}{3} > \frac{1}{9} \Rightarrow t_n = \frac{12n - 1}{12n + 1}$ $t_n < \frac{1}{9} \Rightarrow \frac{12n - 1}{12n + 1} < \frac{1}{9} \Rightarrow 12n - 1 < 12n + 1 \Rightarrow 12n < 2 \Rightarrow n < \frac{1}{6}$ $n = 1, 2, 3, 4, 5$ ✓ $n < 4, 5$	8
$t_n = 4, 9, 9, 7$ $\frac{1}{r} n^r + bn \Rightarrow -\frac{1}{r} n^r + bn \Rightarrow n_1 = -\frac{1}{r} + b = 4$ $A = -1, 4$ ✓ $b = \frac{1}{2}, 4$ ✓ $4v, 4 + (-1, 4) = (3, 4)$ ✓	9
$-9, -7, 0, \dots$ $4a = 7 \rightarrow a = \frac{7}{4}$ $t_n = an^r + bn + C \rightarrow \begin{cases} t_1 = 1 + b + C = -9 \\ t_7 = 7 + 7b + C = -7 \end{cases} \rightarrow \begin{cases} b + C = -10 \\ 7b + C = -14 \end{cases} \rightarrow \begin{cases} b = -1 \\ C = -9 \end{cases}$ $b_n = An + B \rightarrow \begin{cases} b_1 = 1A + B = 1 \\ b_7 = 7A + B = 7 \end{cases} \rightarrow A = 0 \quad B = 1 \rightarrow b_n = 0n + 1$ $b_n = t_n \rightarrow n^r - n - 9 = 0n + 1 \rightarrow n^r - 9n - 10 = 0 \rightarrow (n-9)(n+10) = 0$	10

$b_n = t_n \rightarrow n^r - n - 9 = 0n + 1 \rightarrow n^r - 9n - 10 = 0 \rightarrow (n-9)(n+10) = 0$
 $n = 9$ ✓ $n \in \mathbb{N}$