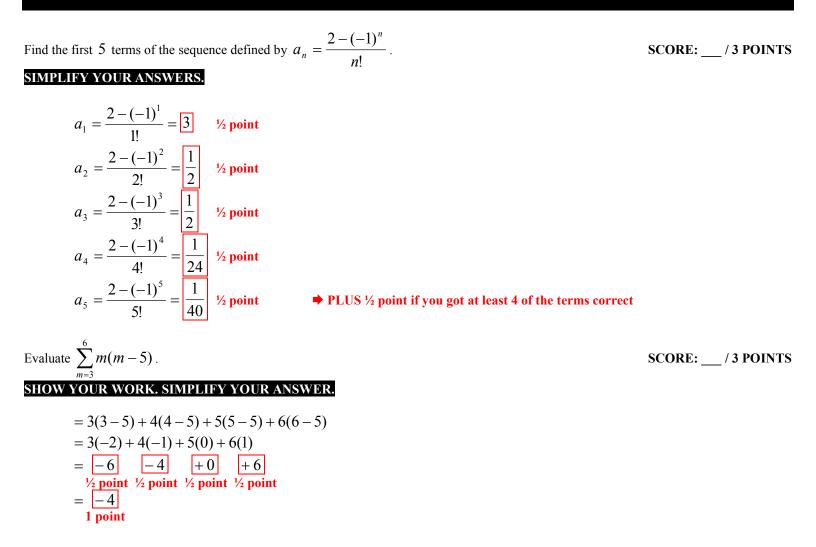
Math 43 (9:30am Class) Quiz 1 Version L Fri Jan 13, 2012

SCORE: ___ / 20 POINTS

WHERE INDICATED, YOU MUST SHOW THE WORK THAT LEAD TO YOUR ANSWER TO GET FULL CREDIT.



Find the first 4 terms of the sequence defined recursively by $a_1 = 1$, $a_k = 3k - a_{k-1}$ (for $k \ge 2$). SCORE: ____/ 3 POINTS

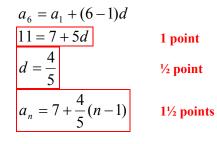
- $a_1 = 1$ \Rightarrow MINUS ½ point if you forgot to write $a_1 = 1$
- $a_2 = 3(2) a_1 = 6 1 = 5$ 1 point
- $a_3 = 3(3) a_2 = 9 5 = 4$ 1 point
- $a_4 = 3(4) a_3 = 12 4 = 8$ 1 point

Fill in the blanks: For the sum $\sum_{m=2}^{k} a_m$, n

k is called the <u>upper limit of summation</u>, and

2 is called the <u>lower limit of summation</u>.

Find a general formula for the arithmetic sequence whose first term is 7, and whose sixth term is 11. SCORE: ____/ 3 POINTS SHOW YOUR WORK.



Use sigma notation to write the sum $\frac{1}{4} + \frac{3}{8} + \frac{7}{16} + \frac{15}{32} + \frac{31}{64}$. SCORE: ____ / 3 POINTS ¹/₂ **point** 5 ^{1/2} point $\sum_{n=1}^{2^n-1} \frac{2^n-1}{2^{n+1}}$ ^{1/2} point for numerator, ^{1/2} point for denominator **PLUS** ^{1/2} point if both correct $\frac{1}{2}$ point n =OR ¹/₂ point $\sum \frac{2^{n-1}-1}{2^n}$ ¹⁄₂ point for numerator, ¹⁄₂ point for denominator ➡ PLUS ¹⁄₂ point if both correct ¹/₂ point $\frac{1}{2}$ point |n| = 2Simplify the expression $\frac{(5n-4)!}{(5n-2)!}$ SCORE: ___ / 3 POINTS SHOW YOUR WORK. $\frac{(5n-4)\cdots(3)(2)(1)}{(5n-2)(5n-3)(5n-4)\cdots(3)(2)(1)}$ 1½ points $\frac{(5n-4)!}{(5n-2)(5n-3)(5n-4)!}$ 1^{1/2} points OR $\overline{(5n-2)(5n-3)}$ $\overline{(5n-2)(5n-3)}$ $1\frac{1}{2}$ points $1\frac{1}{2}$ points