Hon Pre-Calc Quiz 9.4 2016 - 2017

Show All Work For FULL Credit!!!!

 Evaluate: (Answer must be a simple fraction in lowest terms)

$$\sum_{j=1}^{10} (6 - \frac{1}{3}j + \frac{5}{4}j^2)$$

2. Determine an explicit formula to find the nth partial

$$\sum_{x=1}^{n} \frac{1}{x(x+1)}$$

sum.

3. Find a formula for the following sequence:

$$\{\text{-4, -5, 4, 35, 100, 211, 380, 619, 940, }\ldots\}$$

4. Prove using mathematical induction:

$$\sum_{i=1}^{n} (i * 2^{i-1}) = 1 + (n-1) * 2^{n}$$

5. Given: $1^3 + 2^3 + 3^3 + 4^3 + \dots + n^3$

a) Determine a formula for the nth partial sum.

b) Prove using mathematical induction:

Hon Pre Calculus Quiz 9.4

Name

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Evaluate: (Answer must be a simple fraction in lowest terms)

$$\sum_{j=1}^{10} \left(6 - \frac{1}{3}j + \frac{5}{4}j^2\right)$$

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$$\sum_{j=1}^{10} \left(6 - \frac{1}{3}j + \frac{5}{4}j^2\right)$$

$$\left(6 + \frac{1}{3}j + \frac{5}{4}j + \frac{5}{4}j^2\right)$$

$$\left(6 - \frac{1}{3}j + \frac{5}{4}j + \frac$$

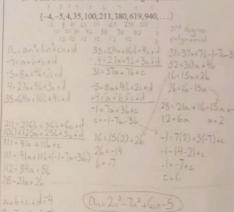
Determine an explicit formula to find the nth partial sum.

$$\sum_{x=1}^{n} \frac{1}{x(x+1)} \cdot \frac{1}{2} + \frac{1}{6} \cdot + \frac{1}{12} + \frac{1}{20} + \frac{1}{92} \cdot \dots \cdot \frac{1}{n(|n|)}$$

$$= \frac{2}{1} \cdot \frac{3}{3} \cdot \frac{9}{9} \cdot \frac{5}{5} \cdot \frac{5}{6} \cdot \dots$$

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3. Find a formula for the following sequence:





4. Prove using mathematical induction:

$$\sum_{i=1}^{s} \left(i \cdot 2^{i-1} \right) = 1 + (n-1) \cdot 2^{s} \cdot \left[a \cdot b \right] + 12^{2} \cdot \dots + 2^{n-1}$$

5. Given: $1^3 + 2^3 + 3^3 + 4^3 + \dots + n^{3} + 1 + 8 + 27 + 64 + \dots + n^3$

a) Determine a formula for the nth partial sum.

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b) Prove using mathematical induction:
$$\int_{\mathbb{R}^{3}} \frac{e^{2i} \{a_{2}\}^{3}}{a_{1}}$$

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$$= \frac{1}{4}$$

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