

MATH 152
Mrs. Bonny Tighe

QUIZ 6A
25 points
9.1,9.2,12.1,12.2

NAME _____

Section _____ Wed. 3/29/06

1. Find the area of the surface obtained by rotation the curve about the y-axis.

$$x = y^3, \quad 0 \leq y \leq 2$$

2. Determine whether the given sequence is increasing, decreasing or not monotonic. Is the sequence bounded?

a) $a_n = \frac{2}{n+1}$

b) $a_n = 3 + (-1)^{n+1}$

3. Find the length of the curve: $y = 3x^{3/2} - 1$, $0 \leq x \leq 1$

4. Determine whether the sequence converges or diverges. If it converges, find the limit.

a) $a_n = \frac{(n+2)}{2(n+1)^2}$

b) $a_n = \sin(n\pi)$

c) $a_n = \frac{2^{n+1}}{7^n}$

d) $a_n = \ln(n+2) - \ln(n-1)$

5. Determine whether the series is divergent or convergent. If it is convergent, find its sum.

a) $\sum_{n=1}^{\infty} 5^{-n} 7^{n-1}$

b) $\sum_{n=1}^{\infty} \frac{1}{n^2 + n}$

c) $\sum_{n=1}^{\infty} \frac{n-1}{n+1}$

d) $1 + \frac{1}{\sqrt{2}} + \frac{1}{2} + \frac{1}{2\sqrt{2}} + \frac{1}{4} + \dots$

6. Express the number $0.\overline{54}$ as a ratio of integers.