MATH 104 TUTORIAL 10 ANSWERS

1. $\lim\limits_{n \to \infty} s_n = \frac{1}{2}$

2.a. the sum of this geometric series is $\dfrac{5}{1-\left(-\frac{1}{4}\right)} = 4$

b. $\dfrac{5}{1-\left(\frac{1}{2}\right)} + \dfrac{1}{1-\left(\frac{1}{3}\right)} = 10 + \frac{3}{2} = \frac{23}{2}$

3.a. diverges

b. test inconclusive

4.a series converges to 3

b. diverges

5.a $\sum\limits_{n=1}^{\infty} \frac{1}{n^2}$ converges

b. diverges

c. diverges

6.a $3\sum\limits_{n=1}^{\infty} \frac{1}{\sqrt{n}}$, which is a divergent p-series $\left(p = \frac{1}{2}\right)$

b. $-2\sum\limits_{n=1}^{\infty} \frac{1}{n^{3/2}}$, which is a convergent p-series $\left(p = \frac{3}{2}\right)$