

Name:

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Sec: 8(9:00-9:50) 9(10:00-10:50)

MATH-102

Term-152

CQ11

Form A

(show all your work and circle one letter to get a full mark or you will get zero)

1) The sequence $\left\{ \frac{9}{4} - \sqrt{2}, \frac{16}{8} - \sqrt[3]{2}, \frac{23}{12} - \sqrt[4]{2}, \frac{30}{16} - \sqrt[5]{2}, \frac{37}{20} - \sqrt[6]{2}, \dots \right\}$

(a) Converges to 7/4

(b) Converges to 5/4

(c) Converges to 3/4

(d) Converges to 1/4

(e) is divergent

(f) None of the above

$$a_n = \frac{7n+2}{4n} - 2^{\frac{1}{n+1}} \quad n=1,2,3, \dots$$

$$= \frac{7n+2}{4n} - \sqrt[n+1]{2} \quad n=1,2, \dots$$

$$\lim_{n \rightarrow \infty} a_n = \lim_{n \rightarrow \infty} \frac{7n+2}{4n} - \lim_{n \rightarrow \infty} 2^{\frac{1}{n+1}}$$

$$= \frac{7}{4} - 1 = \frac{7}{4} - \frac{4}{4}$$

$$= \frac{3}{4}$$

Form B \rightarrow (d)