

Solutions to Week in Review 7

1. a.) Diverges to ∞
b.) Converges to $\ln \frac{1}{3}$
c.) Converges to 0
d.) Diverges by oscillation
e.) Converges to 0
2. a.) $\frac{2}{5}$
b.) $\frac{3 - \sqrt{5}}{2}$
3. a.) Decreasing
b.) Decreasing
c.) Non monotonic
4. a.) The sequence is bounded below by 0 and bounded above by 1.
b.) The sequence is bounded below by $\frac{1}{2}$ and not bounded above.
5. $\sum_{n=1}^{\infty} \frac{1}{n}$ diverges and $\sum_{n=1}^{\infty} \frac{1}{n^2}$ converges. The whole point is how fast the terms are going to zero.
6. 5.5
7. a.) $\frac{1}{6}$
b.) diverges to $-\infty$
c.) $\frac{7}{3}$
d.) -10
e.) $\frac{10}{3}$
f.) $\frac{4}{45}$
g.) Diverges
h.) $\frac{20}{3}$