The answers the SI leader sent out by email contained some mistakes. Below are the corrected answers.

Test 3 Review answer key

1. Interval of convergence ~~(2,3)~~ [2, 3).

Recall the interval of convergence is the set of x's for which the power series converges, either
- absolutely

or
- conditionally.

The power series in (1) converges conditionally when x = 2 and diverges when X = 3.

2. R= infinity

3. $\sum_{n=0}^{\infty}(-1)^n 3(n+1)(x-1)^n$

4. $\mathrm{Ln}(3) + \sum_{n=1}^{\infty}\frac{2^n(-1)^{\cancel{n}\,(n+1)}(x-1)^n}{3^n n}$

5. $\sum_{n=0}^{\infty}\frac{8}{3}\left(\frac{x}{3}\right)^n$ interval (-3,3)

6. $\sum_{n=0}^{\infty} 3(-x^2)^n$ interval (-1,1)

7. $\sum_{n=0}^{\cancel{6}\,5} -\frac{7(x+4)^n}{4^{n+1}}$

$$= -\frac{7}{4} - \frac{7(x+4)}{4^2} - \frac{7(x+4)^2}{4^3} - \frac{7(x+4)^3}{4^4} - \frac{7(x+4)^4}{4^5} - \frac{7(x+4)^5}{4^6}$$

8. $\sum_{n=0}^{\infty} \frac{(-1)^n \cancel{x^{2n+1}}}{n!(2n+1)}$ i.e. $\sum_{n=0}^{\infty} \frac{(-1)^n}{n!\,(2n+1)}$

9. $\sum_{n=\cancel{0}\,1}^{\infty} x^{n+1}\, 2^{n-1} n$

valid when $-1 < x < 1$, i.e.

valid when $x \in (-1, 1)$.