

Mr. Ward Answer Key

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2. $r = -1/3$

$|r| < 1$ so Converges

3. $r = -5$

$|r| > 1$ so Diverges

4. $r = 2/3$

$|r| < 2/3$ so Converges

5. $r = 2/3$

$$S_{\infty} = \frac{0.75}{1 - 2/3}$$

$$S_{\infty} = 2.25$$

6. $r = 1/4$

$$S_{\infty} = \frac{1}{1 - 1/4}$$

$$S_{\infty} = 4/3$$

7. $r = 1/4$

$$S_{\infty} = \frac{800}{1 - 1/4}$$

$$S_{\infty} = 1066 \frac{2}{3}$$

15. $r = 1/5$

$|r| < 1$ so Converges

16. $r = 2$

$|r| > 1$ so Diverges

17. $r = -2$

$|r| > 1$ so Diverges

18. $r = 1/10$

$$S_{\infty} = \frac{6}{1 - 1/10}$$

$$S_{\infty} = 6 \frac{3}{3}$$

19. $r = -1/2$

$$S_{\infty} = \frac{8/5}{1 - (-1/2)}$$

$$S_{\infty} = 1.0\bar{6} \text{ or } \frac{16}{15}$$

20. $r = 3.5$

Diverges so no
Infinite Sum

30. $r = -2/5$

$$S_{\infty} = \frac{215}{1 - (-2/5)}$$

$$S_{\infty} = 153.57$$

31. $r = 4/5$

$$S_{\infty} = \frac{500}{1 - 4/5}$$

$$S_{\infty} = 2500$$

32. $r = -1.25$

Diverges so no
Infinite Sum

33. $r = 1/8$

$$S_{\infty} = \frac{-5}{1 - 1/8}$$

$$S_{\infty} = -5.71$$

34. $r = 1/4$

$$S_{\infty} = \frac{2}{1 - 1/4}$$

$$S_{\infty} = 2 \frac{2}{3}$$

35. $r = 5/3$

Diverges so no
Infinite Sum

36. $r = 1.2$

Diverges so no
Infinite Sum

37. $r = 0.6$

$$S_{\infty} = \frac{200}{1 - 0.6}$$

$$S_{\infty} = 500$$