Review – Lecture 11-13

1. Find t_{20} if $t_n = 2n - 10$ 2. Find t_{18} if $t_n = \dfrac{n}{15} - 1$ 3. Find t_{33} if $t_n = 6 + \dfrac{1}{3}n$

4. Which term of the sequence 2, 5, 8, 11 is 4292?

5. Find the 79th term of the sequence $9\dfrac{1}{2}, 9, 8\dfrac{1}{2}...$

6. Find the 18th term of the sequence 80, 60, 40, 20...

7. Which term of the sequence $\dfrac{1}{3}, 2, 12...$ is 432?

8. Find $\displaystyle\sum_{n=1}^{81} \dfrac{n+3}{4}$ 9. Find $\displaystyle\sum_{n=10}^{49} 2n - 3$

10. In an AP, if $t_3 = 2$ and $t_{24} = 9$ find a and d.

11. In an AP, if $t_{17} = 26$ and $t_{300} = 592$ find t_{61}.

12. For what values of x would x − 1, 2 − 2x and 2x + 2 be consecutive terms of an AP?

13. Find the sum of the multiples of 12 from 24 to 1200.

14. Find the sum of the multiples of 3 from 10 to 100.

15. Write explicit formulas for the following:

a) 10, 19, 28, 37....   b) 10, 20, 40, 80....   c) -1, 2, 7, 14, 23, 34...

16. How many terms of the sequence -38, -36, -34... must be added to give a sum of 0?

17. Find the 6th term of a AP whose second term is 1, if the 3rd, 5th and 9th term of the AP form their own little GP

18. Find three terms of a GP if the sum of the first two is 2 and the third term is $\dfrac{1}{3}$

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ANSWERS

1. 30   2. $\frac{1}{5}$ 3. 17   4. 1431   5. -29

6. -260   7. 5th 8. 891 (n = 81, a = 1, t_n = 21)

9. 2240 (n = 40, a = 17, t_n = 95)   10. a=1$\frac{1}{3}$ d = $\frac{1}{3}$

11. 114 (a = -6, d = 2)   12 $\frac{3}{7}$

13. 60588 (n = 99, a = 24, t_n = 1200)   14. 1665 (n = 30, a = 12, t_n = 99)

15. a) $t_n = 1 + 9n$ b) $t_n = 10(2)^n$ c) $f(x) = x^2 - 2$; a = 1, b = 0, c = -2

16. 39 terms (show work to prove it)   17. 1 or 5

18. $3, -1, \frac{1}{3}$ or $\frac{4}{3}, -\frac{2}{3}, \frac{1}{3}$

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Review Part 2

1. Find the 7th term of the sequence 81, -27, 9...

2. Find the 10th term of the sequence 4, 6, 9......

3. Which term of the sequence 1, 3, 9 ... is 729?

4. Which term of the sequence 40, -20, 10...is $-\dfrac{5}{4}$?

5. Find $\displaystyle\sum_{k=1}^{8}\dfrac{1}{5}(10)^k$

6. $\displaystyle\sum_{k=0}^{10}\left(\dfrac{1}{2}\right)^{k-1}$

7. In a GP, $t_2 = 44$ and $t_5 = \dfrac{11}{2}$. Find a and t_7.

9. Find t so that $t-8$, t and 5t are 3 sequential terms of a GP.

10. Find 3 terms in a GP such that the sum of the 1st two is 15 and the third term is 20

11. Find t so that 2t − 1, t + 7 and 3t + 15 are sequential terms of an AP.

Answers

1. $\dfrac{1}{9}$　　2. $\dfrac{19683}{128}$　　3. 7　　4. 6　　5. 22222222　　6. $\dfrac{2047}{512}$

7. 88, $\dfrac{11}{8}$　　9. 10　　10. 5, 10, 20 or　45, -30, 20　　11. 0

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Supplemental Review

1. Find the 8th term of the sequence 162, 54, 18...

2. Find the 7th term of the sequence $\frac{1}{9}, -\frac{1}{3}, 1......$

3. Which term of the sequence 3, 9, 27 ... is 729?

4. Which term of the sequence 40, 4, .4...is $\frac{4}{1000}$?

5. Find $\sum_{k=1}^{6} 2(3)^k$ 6. $\sum_{k=1}^{10} (-1)^{k-1}$

7. In a GP, $t_2 = 3$ and $t_6 = 12$. Find a and t_7.

8. Fill in the GP 50, ____, ____, ____, 2

9. Find t so that $t - 2$, $t + 1$ and $5t + 1$ are 3 sequential terms of a GP

1. $\frac{2}{27}$ 2. 81   3. 6   4. 5   5. 2184   6. 0

7. $\pm\frac{3\sqrt{2}}{2}, \pm12\sqrt{2}$ 8. $10\sqrt{5}, 10, 2\sqrt{5}$ or $2\sqrt{5}, 10, 10\sqrt{5}$ 9. 3 or $-\frac{1}{4}$