Arthmetic Progression

1. i) $-3, -2, -1, 0$ Ans: $d = 1$, $-3 + 1, = -2$,

ii) $-1.0, -1.5, -2.0, -2.5$ .... Ans: $d = 0.5$; , $-1.5 - 0.5 =$

2. a = ans $\quad d$ = ans

$a = 2 \quad = 1.2$

or $\quad = 3$

$a = -5 \quad = -2$

$a = \sqrt{3} \quad = 1.5$

3. $a = ? \Rightarrow a = \frac{3}{2}$

$d = ?$

$d = \frac{1}{2} - \frac{3}{2}$

$= \frac{1-3}{2}$

$= \frac{-2}{2} = -1$

4. i) $4, 10, 16, 22$ ✓ ii) $1, -1, -3, -5$ ✓

iii) $-2, -2, -2, -2$ X iv) $1, 1, 1, 2, 2, 2$ X

7. $\frac{2p-1}{a_1}, \frac{3p+1}{a_2}, \frac{11}{a_3}$

find : p

$a_2 - a_1 = d$

$a_3 - a_2 = d$

$\Rightarrow 3p + 1 - (2p - 1)$

$3p + 1 - 2p + 1$

$p + 2$

$p + 2 = 10 - 3p$

$p + 3p = 10 - 2$

$p = 2$

$\Rightarrow 11 - (3p + 1)$

$10 - 3p$

8. 5, 11, 17, 22 find n^{th} Term

$d = 6$

$a_n = a + (n-1)d$

$= 5 + (n-1)\,6$

$a_n = 6n - 1$

10 a $a_n = a + (n-1)\,d$

$a_n = 2\,(n-1)\,5$

$a_n = 5n - 3$

11. 21, 18, 15, ... , -81

$a_n = 21 + (n-1)\,-3$

$= 21 - 3n + 3$

$a = 18 - 21$

$d = -3$

$24 - 3\,(1) = 21$

12. 3rd $a_3 = 5$ Find: a, d

$a_7 = 9$

$a_n = a + (n-1)d$

$a_3 = a + (2d) = 5$

$a_7 = a + 6d = 9$

$x + 2y = 5$

$x + 6y = 9$

$y = 1$

$x + 2(1) = 5$

$x = 5 - 2 = 3$ $\quad d = 5$

$x = 3$

14 $n = 1$

$n = 2$

$n = 3$

$5 + (n-1)6 = 301 - 5$

$n - 1 = 49.5$

$n = 50.5$

15 ~~18~~, 12, 15, 18 99

$a + (n-1)\,d = 9$

$12 + 3(n-1) = 99$

$3(n-1) = 87$

$(n-1) = 29$

$n = 30$

16. $-62, -59, -56$

$a_{11} = a + 10d$

$= -62 + 10(30$

$a_{11} = -32$

17. 80, 160, 240

Yes ✓

$a = 80$

$d = 80$

30 year

$a + 29d = 2400$

15 $a = 23$

$d = -2$

$a + (n-1)d = 5$

$23 + (n-1)(-2) = 5$

$-2(n-1) = 5 - 23$

$(n-1) = \frac{-18}{-2} = 9$

$n = 10$