

Find the indicated term

23)  $a_{10}$  if  $a_1 = 4$ ,  $d = 5$

24)  $a_{31}$  if  $a_1 = 3$ ,  $d = 8$

25)  $a_{20}$  for 5, 9, 13, 17, ...

26)  $a_{30}$  for -24, -21, -18, ...

27)  $a_{12}$  if  $a_1 = 5$ ,  $a_3 = 20$

28)  $a_{40}$  if  $a_8 = 60$ ,  $a_{12} = 48$

Find the missing numbers in each arithmetic sequence

29) 0, \_\_\_\_, \_\_\_\_, -12

30) 55, \_\_\_\_, \_\_\_\_, \_\_\_\_, 115

31) 20, \_\_\_\_, \_\_\_\_, \_\_\_\_, \_\_\_\_, 2

32) \_\_\_\_, -6, \_\_\_\_, \_\_\_\_, 15, \_\_\_\_

Find the sum of each of the following

33)  $1 + 5 + 9 + 13 + 17 + 21 + 25 + 29$

34)  $7 + 10 + 13 + 16 + 19 + 22$

35)  $6 + 10 + 14 + \dots + 42$

36)  $34 + 30 + 26 + \dots + 2$

Find  $S_n$

37)  $a_1 = 11$ ,  $a_n = 44$ ,  $n = 23$

38)  $a_1 = 85$ ,  $a_n = 25$ ,  $n = 21$

39)  $a_1 = 8$ ,  $n = 6$ ,  $d = 5$

40)  $a_1 = 14$ ,  $d = -1$ ,  $n = 22$

Find the indicated term

23)  $a_{10}$  if  $a_1 = 4, d = 5$   $a_{10} = 4 + (10-1)5$   
 $= 4 + 45$   
 $= 49$

24)  $a_{31}$  if  $a_1 = 3, d = 8$   $a_{31} = 3 + (31-1)8$   
 $= 3 + 240$   
 $= 243$

25)  $a_{20}$  for 5, 9, 13, 17, ...

$a_{20} = 5 + (20-1)4$   
 $= 5 + 76$   
 $= 81$

27)  $a_{12}$  if  $a_1 = 5, a_3 = 20$   
 $20 = 5 + (3-1)d$   $a_{12} = 5 + (12-1)7.5$   
 $20 = 5 + 2d$   $a_{12} = 87.5$   
 $7.5 = d$

28)  $a_{40}$  if  $a_8 = 60, a_{12} = 48$

$a_1 = 60$   $a_5 = 48$   $a_{33} = 60 + (33-1)(-3)$

$48 = 60 + (5-1)d$   $a_{33} = -36$   
 $-3 = d$   $a_{40} = -36$

Find the missing numbers in each arithmetic sequence

29) 0, -4, -8, -12  
 $-12 = 0 + (4-1)d$   
 $-12 = 3d$   $115 = 55 + (5-1)d$   
 $115 = 55 + 4d$   
 $15 = d$

31) 20, 17, 14, 11, 8, 5, 2  
 $2 = 20 + (7-1)d$   $15 = -6 + (4-1)d$   
 $2 = 20 + 6d$   $15 = -6 + 3d$   
 $-3 = d$   $7 = d$

Find the sum of each of the following

33)  $1 + 5 + 9 + 13 + 17 + 21 + 25 + 29$   
 $S_n = \frac{(1+29)8}{2} = 120$

34)  $7 + 10 + 13 + 16 + 19 + 22$   
 $S_n = \frac{(7+22)6}{2} = 87$

35)  $6 + 10 + 14 + \dots + 42$

$42 = 6 + (n-1)4$   $S_n = \frac{(6+42)10}{2} = 240$   
 $42 = 6 + 4n - 4$   
 $40 = 4n$   
 $n = 10$

36)  $34 + 30 + 26 + \dots + 2$

$2 = 34 + (n-1)(-4)$   $S_n = \frac{(34+2)9}{2} = 162$   
 $2 = 34 - 4n + 4$   
 $-36 = -4n$   
 $9 = n$

Find  $S_n$

37)  $a_1 = 11, a_n = 44, n = 23$

$S_n = \frac{(11+44)23}{2} = 632.5$

38)  $a_1 = 85, a_n = 25, n = 21$

$S_n = \frac{(85+25)21}{2} = 1155$

39)  $a_1 = 8, n = 6, d = 5$

$a_n = 8 + (6-1)5$

$= 33$   $S_n = \frac{(8+33)6}{2} = 123$

$a_n = 14 + (22-1)(-1)$

$= -7$   $S_n = \frac{(14-7)(22)}{2} = 77$