

Arithmetic Series

Date _____

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Evaluate each arithmetic series described.

1) $a_1 = 7, a_n = 27, n = 5$

2) $a_1 = -6, a_n = 50, n = 15$

3) $a_1 = 43, a_n = 283, n = 25$

4) $a_1 = 9, a_n = 45, n = 13$

5) $a_1 = -2, a_n = 8, n = 6$

6) $a_1 = 15, a_n = 50, n = 6$

7) $(-27) + (-33) + (-39) + (-45)\dots, n = 11$

8) $(-5) + (-8) + (-11) + (-14)\dots, n = 9$

9) $0 + 2 + 4 + 6\dots, n = 17$

10) $1 + (-2) + (-5) + (-8)\dots, n = 10$

11) $(-1) + 1 + 3 + 5\dots, n = 18$

12) $27 + 37 + 47 + 57\dots, n = 13$

Determine the number of terms n in each arithmetic series.

13) $a_1 = -2, a_n = -345, S_n = -8675$

14) $a_1 = 5, a_n = 17, S_n = 55$

15) $a_1 = 26, a_n = 56, S_n = 246$

16) $a_1 = 41, a_n = 151, S_n = 1152$

17) $a_1 = -6, a_n = -202, S_n = -5200$

18) $a_1 = 18, a_n = 66, S_n = 378$

19) $a_1 = 10, a_n = 38, S_n = 120$

20) $a_1 = -25, a_n = -123, S_n = -1110$

21) $a_1 = 32, a_n = 128, S_n = 1040$

22) $a_1 = -16, a_n = -76, S_n = -322$

23) $a_1 = 8, d = 4, S_n = 308$

24) $a_1 = 29, d = 6, S_n = 264$

25) $a_1 = -34, d = -10, S_n = -1560$

26) $a_1 = 27, d = 10, S_n = 6895$

27) $a_1 = 34, d = 10, S_n = 270$

28) $a_1 = -8, d = -4, S_n = -5300$

29) $a_1 = 30, d = 7, S_n = 6660$

30) $a_1 = 14, d = 3, S_n = 275$

31) $a_1 = 4, d = 6, S_n = 374$

32) $a_1 = 8, d = 4, S_n = 416$

Answers to Arithmetic Series (ID: 1)

1) 85

5) 18

9) 272

13) 50

17) 50

21) 13

25) 15

29) 40

2) 330

6) 195

10) -125

14) 5

18) 9

22) 7

26) 35

30) 10

3) 4075

7) -627

11) 288

15) 6

19) 5

23) 11

27) 5

31) 11

4) 351

8) -153

12) 1131

16) 12

20) 15

24) 6

28) 50

32) 13

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Evaluate each arithmetic series described.

1) $a_1 = -21, a_n = -461, n = 45$

2) $a_1 = -8, a_n = -44, n = 10$

3) $a_1 = -25, a_n = -137, n = 15$

4) $a_1 = -20, a_n = -98, n = 14$

5) $a_1 = 47, a_n = 87, n = 5$

6) $a_1 = 12, a_n = 110, n = 50$

7) $17 + 22 + 27 + 32\dots, n = 14$

8) $22 + 30 + 38 + 46\dots, n = 16$

9) $9 + 11 + 13 + 15\dots, n = 7$

10) $21 + 28 + 35 + 42\dots, n = 8$

11) $24 + 34 + 44 + 54\dots, n = 10$

12) $4 + 6 + 8 + 10\dots, n = 8$

Determine the number of terms n in each arithmetic series.

13) $a_1 = 12, a_n = 42, S_n = 162$

14) $a_1 = 15, a_n = 37, S_n = 312$

15) $a_1 = 7, a_n = 313, S_n = 5600$

16) $a_1 = 7, a_n = 63, S_n = 525$

17) $a_1 = 10, a_n = 34, S_n = 286$

18) $a_1 = 16, a_n = 46, S_n = 217$

19) $a_1 = 32, a_n = 428, S_n = 10350$

20) $a_1 = 30, a_n = 170, S_n = 1500$

21) $a_1 = 43, a_n = 483, S_n = 11835$

22) $a_1 = 8, a_n = 128, S_n = 1700$

23) $a_1 = -3, d = -4, S_n = -465$

24) $a_1 = 27, d = 9, S_n = 675$

25) $a_1 = -6, d = 2, S_n = 98$

26) $a_1 = 12, d = 9, S_n = 525$

27) $a_1 = 11, d = 9, S_n = 845$

28) $a_1 = -3, d = -4, S_n = -1830$

29) $a_1 = 23, d = 6, S_n = 2375$

30) $a_1 = -15, d = -9, S_n = -1170$

31) $a_1 = -3, d = -10, S_n = -1960$

32) $a_1 = -40, d = -8, S_n = -544$

Answers to Arithmetic Series (ID: 2)

1) -10845

5) 335

9) 105

13) 6

17) 13

21) 45

25) 14

29) 25

2) -260

6) 3050

10) 364

14) 12

18) 7

22) 25

26) 10

30) 15

3) -1215

7) 693

11) 690

15) 35

19) 45

23) 15

27) 13

31) 20

4) -826

8) 1312

12) 88

16) 15

20) 15

24) 10

28) 30

32) 8

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Evaluate each arithmetic series described.

1) $a_1 = -6, a_n = -16, n = 6$

2) $a_1 = 17, a_n = 127, n = 12$

3) $a_1 = -26, a_n = -124, n = 15$

4) $a_1 = -12, a_n = -48, n = 5$

5) $a_1 = 26, a_n = 377, n = 40$

6) $a_1 = -7, a_n = -25, n = 7$

7) $13 + 18 + 23 + 28\dots, n = 19$

8) $11 + 19 + 27 + 35\dots, n = 14$

9) $14 + 16 + 18 + 20\dots, n = 14$

10) $8 + 13 + 18 + 23\dots, n = 8$

11) $3 + 7 + 11 + 15\dots, n = 17$

12) $(-1) + 4 + 9 + 14\dots, n = 17$

Determine the number of terms n in each arithmetic series.

13) $a_1 = 24, a_n = 194, S_n = 3815$

14) $a_1 = 4, a_n = 236, S_n = 3600$

15) $a_1 = 15, a_n = 57, S_n = 540$

16) $a_1 = 5, a_n = 221, S_n = 2825$

17) $a_1 = 29, a_n = 128, S_n = 942$

18) $a_1 = 33, a_n = 153, S_n = 1209$

19) $a_1 = 27, a_n = 135, S_n = 1053$

20) $a_1 = 6, a_n = 18, S_n = 84$

21) $a_1 = -6, a_n = 22, S_n = 120$

22) $a_1 = -6, a_n = 30, S_n = 156$

23) $a_1 = 33, d = 10, S_n = 5340$

24) $a_1 = 32, d = 9, S_n = 508$

25) $a_1 = 9, d = 3, S_n = 1125$

26) $a_1 = 23, d = 9, S_n = 1001$

27) $a_1 = 42, d = 10, S_n = 402$

28) $a_1 = -12, d = -9, S_n = -738$

29) $a_1 = 1, d = -2, S_n = -575$

30) $a_1 = 11, d = 10, S_n = 1064$

31) $a_1 = -34, d = -6, S_n = -804$

32) $a_1 = 9, d = 5, S_n = 3290$

Answers to Arithmetic Series (ID: 3)

1) -66
5) 8060
9) 378
13) 35
17) 12
21) 15
25) 25
29) 25

2) 864
6) -112
10) 204
14) 30
18) 13
22) 13
26) 13
30) 14

3) -1125
7) 1102
11) 595
15) 15
19) 13
23) 30
27) 6
31) 12

4) -150
8) 882
12) 663
16) 25
20) 7
24) 8
28) 12
32) 35

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Evaluate each arithmetic series described.

1) $a_1 = 9, a_n = 42, n = 12$

2) $a_1 = -34, a_n = -66, n = 5$

3) $a_1 = 8, a_n = 314, n = 35$

4) $a_1 = 22, a_n = 294, n = 35$

5) $a_1 = 15, a_n = 127, n = 15$

6) $a_1 = 2, a_n = 18, n = 9$

7) $10 + 20 + 30 + 40\dots, n = 13$

8) $48 + 58 + 68 + 78\dots, n = 10$

9) $27 + 34 + 41 + 48\dots, n = 10$

10) $31 + 38 + 45 + 52\dots, n = 18$

11) $18 + 28 + 38 + 48\dots, n = 11$

12) $30 + 38 + 46 + 54\dots, n = 17$

Determine the number of terms n in each arithmetic series.

13) $a_1 = 7, a_n = 35, S_n = 105$

14) $a_1 = 20, a_n = 64, S_n = 504$

15) $a_1 = 20, a_n = 90, S_n = 440$

16) $a_1 = 25, a_n = 75, S_n = 550$

17) $a_1 = 27, a_n = 67, S_n = 235$

18) $a_1 = -2, a_n = 193, S_n = 3820$

19) $a_1 = 17, a_n = 44, S_n = 305$

20) $a_1 = 37, a_n = 93, S_n = 520$

21) $a_1 = 31, a_n = 143, S_n = 1305$

22) $a_1 = 33, a_n = 141, S_n = 1131$

23) $a_1 = -13, d = -10, S_n = -165$

24) $a_1 = -13, d = -3, S_n = -95$

25) $a_1 = -24, d = -10, S_n = -3600$

26) $a_1 = 4, d = 10, S_n = 396$

27) $a_1 = -32, d = -8, S_n = -576$

28) $a_1 = -1, d = 2, S_n = 80$

29) $a_1 = 10, d = 10, S_n = 550$

30) $a_1 = -14, d = -3, S_n = -275$

31) $a_1 = -17, d = -3, S_n = -115$

32) $a_1 = -16, d = -2, S_n = -100$

Answers to Arithmetic Series (ID: 4)

1) 306

5) 1065

9) 585

13) 5

17) 5

21) 15

25) 25

29) 10

2) -250

6) 90

10) 1629

14) 12

18) 40

22) 13

26) 9

30) 10

3) 5635

7) 910

11) 748

15) 8

19) 10

23) 5

27) 9

31) 5

4) 5530

8) 930

12) 1598

16) 11

20) 8

24) 5

28) 10

32) 5

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Evaluate each arithmetic series described.

1) $a_1 = 16, a_n = 56, n = 11$

2) $a_1 = 0, a_n = 117, n = 14$

3) $a_1 = 4, a_n = 82, n = 40$

4) $a_1 = 16, a_n = 46, n = 7$

5) $a_1 = 10, a_n = 32, n = 12$

6) $a_1 = 12, a_n = 38, n = 14$

7) $6 + 10 + 14 + 18\dots, n = 12$

8) $16 + 25 + 34 + 43\dots, n = 19$

9) $29 + 39 + 49 + 59\dots, n = 20$

10) $(-1) + 1 + 3 + 5\dots, n = 7$

11) $(-6) + (-3) + 0 + 3\dots, n = 16$

12) $47 + 57 + 67 + 77\dots, n = 9$

Determine the number of terms n in each arithmetic series.

13) $a_1 = 22, a_n = 112, S_n = 670$

14) $a_1 = 2, a_n = 38, S_n = 200$

15) $a_1 = 14, a_n = 44, S_n = 203$

16) $a_1 = 1, a_n = 169, S_n = 2125$

17) $a_1 = 3, a_n = 81, S_n = 1680$

18) $a_1 = 19, a_n = 110, S_n = 903$

19) $a_1 = 13, a_n = 113, S_n = 693$

20) $a_1 = 0, a_n = 24, S_n = 156$

21) $a_1 = 16, a_n = 46, S_n = 341$

22) $a_1 = 28, a_n = 70, S_n = 343$

23) $a_1 = -23, d = -7, S_n = -1080$

24) $a_1 = -39, d = -10, S_n = -14200$

25) $a_1 = 10, d = 5, S_n = 220$

26) $a_1 = -9, d = -4, S_n = -555$

27) $a_1 = 20, d = 5, S_n = 300$

28) $a_1 = 23, d = 10, S_n = 567$

29) $a_1 = -40, d = -10, S_n = -1470$

30) $a_1 = 8, d = 2, S_n = 294$

31) $a_1 = 30, d = 5, S_n = 200$

32) $a_1 = -4, d = 3, S_n = 3475$

Answers to Arithmetic Series (ID: 5)

1) 396
5) 252
9) 2480
13) 10
17) 40
21) 11
25) 8
29) 14

2) 819
6) 350
10) 35
14) 10
18) 14
22) 7
26) 15
30) 14

3) 1720
7) 336
11) 264
15) 7
19) 11
23) 15
27) 8
31) 5

4) 217
8) 1843
12) 783
16) 25
20) 13
24) 50
28) 9
32) 50

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Evaluate each arithmetic series described.

1) $a_1 = -1, a_n = 80, n = 10$

2) $a_1 = 9, a_n = 165, n = 40$

3) $a_1 = 6, a_n = 32, n = 14$

4) $a_1 = 36, a_n = 388, n = 45$

5) $a_1 = 22, a_n = 174, n = 20$

6) $a_1 = 30, a_n = 70, n = 5$

7) $18 + 26 + 34 + 42\dots, n = 14$

8) $37 + 47 + 57 + 67\dots, n = 17$

9) $27 + 37 + 47 + 57\dots, n = 18$

10) $33 + 42 + 51 + 60\dots, n = 14$

11) $23 + 32 + 41 + 50\dots, n = 19$

12) $1 + 4 + 7 + 10\dots, n = 13$

Determine the number of terms n in each arithmetic series.

13) $a_1 = 15, a_n = 81, S_n = 576$

14) $a_1 = -9, a_n = -449, S_n = -10305$

15) $a_1 = 48, a_n = 98, S_n = 438$

16) $a_1 = 10, a_n = 28, S_n = 190$

17) $a_1 = 7, a_n = 147, S_n = 1155$

18) $a_1 = 22, a_n = 412, S_n = 8680$

19) $a_1 = 16, a_n = 52, S_n = 340$

20) $a_1 = 6, a_n = 90, S_n = 624$

21) $a_1 = 4, a_n = 42, S_n = 460$

22) $a_1 = 16, a_n = 58, S_n = 296$

23) $a_1 = 2, d = 3, S_n = 1365$

24) $a_1 = 14, d = 10, S_n = 2180$

25) $a_1 = 10, d = 10, S_n = 10350$

26) $a_1 = 27, d = 9, S_n = 4725$

27) $a_1 = 30, d = 8, S_n = 7440$

28) $a_1 = 3, d = 6, S_n = 6075$

29) $a_1 = -9, d = -5, S_n = -5355$

30) $a_1 = 27, d = 9, S_n = 918$

31) $a_1 = 9, d = 6, S_n = 585$

32) $a_1 = -20, d = -7, S_n = -4865$

Answers to Arithmetic Series (ID: 6)

1) 395

5) 1960

9) 2016

13) 12

17) 15

21) 20

25) 45

29) 45

2) 3480

6) 250

10) 1281

14) 45

18) 40

22) 8

26) 30

30) 12

3) 266

7) 980

11) 1976

15) 6

19) 10

23) 30

27) 40

31) 13

4) 9540

8) 1989

12) 247

16) 10

20) 13

24) 20

28) 45

32) 35